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## UNIVERSAL DIRECTORY OF RAILWAY OFFICIALS AND RAILWAY YEAR BOOK

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THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1

### Staff Consultation Agreement Signed

THE recent decision by the N.U.R., as reported in our issue of November 25, to join forces with the A.S.L.E. & F. and the R.C.A. in helping to make a success of the machinery for consultation between management and staff put into effect by the Railway Executive in May, resulted last weekend in the signing of an important new agreement whereby the machinery will now embrace all subjects related to administration outside the scope of the existing negotiating procedure covering wages, conditions of service, and so on. Another party to the present agreement is the Confederation of Shipbuilding & Engineering Unions, which has members in railway workshops. The terms are set out in a leaflet to be issued to all railwaymen and are given in full on page 716. Consultation will take place at all levels corresponding to those of the negotiating machinery. Indication will be given to the staff by the Railway Executive of any contemplated lines of action and careful consideration will be given to representations from the staff in regard to such proposals. Should occasions arise where it is not possible or advisable to give effect to staff representations, the Railway Executive has undertaken to state its reasons. Matters for discussion will not be restricted to any set list of subjects.

### Attack on T.U.C. Wages Policy

Mr. J. B. Figgins, General Secretary, N.U.R., in *The Railway Review* of December 2, outlined some of his reasons for disapproving of the T.U.C. policy of wages restraint, which we referred to briefly last week. Returning to the attack in the December 9 issue of that journal Mr. Figgins again calls attention to the position of the lower-paid railwayman and argues that in the light of the new T.U.C. policy his opportunity of earning higher pay is slight when considered in conjunction with increased production. Employees in this category, he goes on, work alongside those in receipt of higher wages, and in such cases any reward for increased productivity should be shared by all. They could only come to the conclusion that the T.U.C. intended no worker to have a wage increase. The average worker, continued Mr. Figgins, should ask whether a wage increase could be afforded on the basis of present production, and what the cost of a £5 a week minimum wage would be. The answer was that the cost of introducing a legal minimum wage of £5 would be about £200 million a year and the profits of trading companies had increased from £1.219 million in 1946 to £1.639 million in 1948.

### Mr. T. J. D. Atkinson

The record of successful working of the Railway Rates Tribunal, established under the Railways Act of 1921, will long remain as a memorial to the skill and patient labour of Mr. T. J. D. Atkinson, O.B.E., K.C., whose death occurred on December 11. Mr. Atkinson, of whom a portrait and biography appear elsewhere in this issue, was appointed, in 1922, the first Registrar of the Tribunal, and held that office until his retirement through ill health in 1944. As Registrar of the Railway Rates Tribunal (which under the Transport Act, 1947, has been re-named the Transport Tribunal), Mr. Atkinson served under three Presidents, Sir Frank Gore Browne, K.C., Sir Walter B. Clode, K.C., and Sir William Bruce Thomas, K.C., and was mainly responsible for building up the procedure of a body which, being newly constituted, had no precedents for its guidance. During the "transitory period" up to the "appointed day" (January 1, 1928) he had to deal with many applications for general and particular reductions of charges, in which the interlocutory proceedings were long and complicated, and none of his decisions was reversed. All the Orders of the Tribunal were drafted by the Registrar without precedent, and none has ever been questioned as to jurisdiction or form.

### Irish Transport Bill Progress

The progress of the Irish Transport Bill through the Dublin Parliament has been stormy, during both the money resolution and committee stages. During the committee stage Mr. D. Morrissey, the Minister of Industry & Commerce, moved an amendment the effect of which is to postpone the operative

date of the Bill from January 1 to April 1, 1950. Another of the principal matters raised at this stage, and keenly debated, was the composition of the board of the new Irish Transport Company. The desirability of the members of the board being part-time, whole-time, or whether there should be both types of director, and also whether they should be lay, technical, or both, was discussed at length without, however, any clear line of policy being evolved. The Minister said he believed that the board should have a full-time chairman and five practical men with knowledge and experience of the economic life of the country. On another point of debate he expressed the view that the general manager of an undertaking of the size of the Irish Transport Company should be a member of the board.

\* \* \* \*

#### The Pullman Car Co. Ltd.

The annual report of the Pullman Car Co. Ltd. shows £754,223 gross receipts for the year ended September 30, 1949, against £654,048 for the previous twelve months. Working expenses grew from £497,031 to £588,267 and the trading profit at £165,956 showed an increase of £8,939. After providing for taxes, depreciation, and so on, there remained a net profit of £72,203 for the year, which compares with £73,786 in the previous twelve months. The directors state that the full impact of increased wages referred to last year, amounting to £43,000, together with the higher price of commodities and greater provision for taxation, were responsible for the reduced net profit. After payment of interest on the 5 per cent. cumulative income stock to redemption at December 31, 1948, and the dividend on the 4½ per cent. preference stock to September 30, 1949, there remained with the amount of £12,197 brought forward a balance of £72,077, from which it is proposed to pay 12½ per cent. on the ordinary shares, leaving £55,749. All the indebtedness of the company has now been paid off. The policy of a high standard of maintenance of rolling stock has been continued, and excess charges for maintenance amounting to £11,405 over the theoretical charge of £45,000 have been written off out of profits in the current year.

\* \* \* \*

#### New Railway in Tanganyika

The 82-mile section of the Southern Province Railway of Tanganyika, between Mkwana and Nachingwea, is now open for traffic, as described elsewhere in this issue. It forms an isolated section of the East African Railways & Harbours, though projected extensions may ultimately link it with the proposed Rhodesia-Kenya trunk line, as the map which accompanies our article shows. Work began in October, 1947, but was slowed because of labour difficulties. As a result, mechanical methods were introduced for some sections, and the completion, due for September 30 last, was only eight days behind schedule. The line was primarily intended to give an outlet for the groundnut area in Southern Tanganyika under development by the Overseas Food Corporation, but it will also be valuable for the export of hardwood from a large forest reserve to be worked near the course of the line. The rolling stock includes locomotives from the Tanganyika Central line, new wagons from the United Kingdom, and secondhand wagons from the Middle East. Except for the rails and fittings the line has been built with local materials. The construction material was handled at a lighter quay at Mkwana at the seaward end.

\* \* \* \*

#### Increasing Productivity in Steel Foundries

Steps are to be taken immediately by the British Steel Founders' Association to implement proposals made at the first Productivity Convention of the B.S.F.A. held at Leamington from November 17-19. In announcing this at a press conference in London on December 7, Mr. F. A. Martin, Chairman, B.S.F.A., and head of the productivity team which recently toured the U.S.A., which visit was referred to in our March 18 issue, said that the B.S.F.A. executive council had decided to set up a special productivity committee. Mr. Martin is to be chairman of this committee. In a summary of the convention proceedings, Mr. Martin said it had been agreed that improvement in productivity of 10 to 25 per cent. was possible, but to obtain this, there must be some accept-

ance of the American attitude towards production. Three specific aids towards increasing production were visualised; these were, a productivity team to tour British steel foundries, the setting up of regional productivity councils within the B.S.F.A., and the calling of a second conference early next year to report progress. Among the proposals for achieving increased production unanimously adopted by the convention was one recommending that the executive council of the B.S.F.A. should take steps to secure adequate supplies of acid-melting scrap to steel foundries to enable economic melting to be more widely adopted. An appeal would be made to the Engineering & Allied Employers' Federation to take urgent action to simplify the present wage structure and methods of calculating wages in the steel founding industry. The formation of a Research & Development Division by the B.S.F.A. was referred to in our November 25 issue.

\* \* \* \*

#### New London Transport Rolling Stock

The first post-war cars for use on the District Line of London Transport will shortly be put into service. As a result of experience gained from the operation of the 1938 stock, and of experiments which have been carried out, many improvements have been incorporated. The exterior closely follows the design of London Transport's 1938 surface stock, but the improvements include anti-telescoping pillars on the exterior car ends, and flush-fitted anti-jamming connecting doors with lift-off hinges. No change has been made in the number of doorways. A re-arrangement of seating in relation to the doorways gives an even distribution of seated passengers; recesses in the lower panels give increased space at the cross-seat positions. Window space and ventilation have been improved considerably, and fluorescent lighting, which has only been tried experimentally, has been adopted. London Transport has also converted a tube car of 1938 design, as an experiment, to provide a high window line by carrying the window glass into the roof, level to the door tops. The door windows have also been extended; in both instances the upper glass has been carried to the roof contour. This has decreased considerably the amount of advertising space available, which may seem strange in view of the financial position of the British Transport Commission.

\* \* \* \*

#### Suburban and Main-Line Electrification

Sir Eustace Missenden's recent paper on railway motive power before the Institute of Transport, in which he outlined his personal views in favour of an extension of electrification to main-line systems, has attracted wider attention than most contributions of this kind. In part this has been due to the fact that the author of the paper is the Chairman of the Railway Executive, although he was not speaking in that capacity; also, railway electrification has a popular appeal. In our November 25 issue a number of points made by Sir Eustace Missenden were dealt with at some length and the question was raised as to whether electrification of the main-line to Manchester or Glasgow would create any new traffic, for if it did not, the capital costs would have to be carried by the present passenger receipts. Sir Eustace Missenden made it clear in his paper that he did not expect main-line electrification to result in increases of traffic comparable to those which have followed on the conversion of suburban and inter-urban routes. He said: "For main-line, as opposed to suburban, electrification, the economic justification must depend primarily on a reduction in working expenses, since the possibilities of securing material increases in passenger traffic and revenue are necessarily more limited."

\* \* \* \*

#### Pre-Stressed Concrete Development in France

On November 17 Monsieur E. Freyssinet presented a paper at a joint meeting of the Institution of Civil Engineers and the Société des Ingénieurs Civils de France (British Section), entitled "Pre-stressed Concrete: Principles and Applications." France has always been in the forefront in reinforced concrete constructional work and is now playing a leading part in the development of pre-stressed concrete structures. Many of the remarkable bridge designs and methods of reconstruction produced in France for the post-war rehabilitation of the

railways have been described and illustrated in our pages. Monsieur Freyssinet's paper covers the whole range of pre-stressed concrete history, theory, behaviour, and properties in practice. The paper also deals exhaustively with the methods of pre-stressing and anchorage of reinforcement. Among the applications of pre-stressing quoted was that in the construction of concrete sleepers. Monsieur Freyssinet has perfected such a sleeper, shortly to be mass-produced, which has been accepted by both the French National and colonial railway authorities. The widest application is probably to bridgework, but pre-stressed concrete is also used on a large scale in applications ranging from pipe manufacture to harbour construction.

\* \* \*

### The Derailment at Merstham

The derailment which took place just outside the south end of the Merstham Quarry Tunnel on June 27, 1949, was fortunately unattended by serious consequences. It was a warm day and it had become very hot in the deep cutting which follows the tunnel. Rail gaps had closed up and the track was under considerable compressive stress. Lateral resistance had become diminished by some work which the ganger had decided to undertake, and as a Victoria-Littlehampton electric train was passing at speed the track became suddenly distorted under it. Brigadier C. A. Langley, a summary of whose report on the case appears in this issue, places primary responsibility on the ganger, who had failed to appreciate the risk involved in what he was doing. The inspector is also held partly to blame. The hope is expressed that the results of the research into the strength of different types of ballast undertaken after the Wath derailment in 1948, and other details affecting track stability, may in due course be published, the subject being one that has not received hitherto all the scientific study its importance merits.

\* \* \*

### Ideal Footplate for British Railways Locomotives

With a view to obtaining the ideal footplate, providing greater comfort and better controls for drivers and firemen, a full-size mock-up has been constructed of the cab of one of the new standard steam locomotives to be built in 1951 for British Railways. All relevant detail, from the front of the firebox as far back as the middle of the tender, and all the controls and fittings in the cab, are reproduced. The design embodies what the Railway Executive considers to be the best practices from each of the Regions, as well as new ideas, and regard has been paid to suggestions made by members of the railway staff and the unions. The arrangement of fittings in the cab is intended to be representative of what will be provided in all twelve standard locomotive types, the design of which, as recorded in our January 7 issue, is under consideration. Apart from providing greater comfort for the drivers and firemen, complete protection from the weather, and more conveniently situated controls, considerable economies should result through standardising the structure of the cab and its fittings. As with all standardisation, results are far-reaching, affecting not only the drawing office, production departments, and the stores departments, but leading to a reduction in the cost of maintenance.

\* \* \*

### Shunting Engines for the Steel Company of Wales

The Steel Company of Wales has placed an order with W. G. Bagnall Limited, Castle Engine Works, Stafford, for the supply of three shunting engines. These locomotives have been designed to haul loads of 325 tons up an incline of 1 in 100, and have outside cylinders and Walschaerts valve gear, which should simplify maintenance. All running gear is accessible without recourse to a pit, enabling the locomotives to remain in service for considerable periods. Special consideration has been given, also, to certain other aspects of the design of the locomotives because of the track layout in the steel works, since the locomotives have to negotiate 170-ft. curves, at the same time avoiding excessive tyre wear. The design is similar to the ten 0-6-0 tank engines which were recently constructed at the Swindon Works to the design of the Chief Mechanical Engineer, to which reference was made in our issue of October 21. The leading dimensions of both designs are given elsewhere in this issue.

### Locomotive Agreement with India

AGENCY messages from New Delhi state that agreement has been reached between the Government of India and the representatives of the Locomotive Manufacturers' Association of Great Britain for the provision of technical aid to Chittaranjan Locomotive Works. It is added that the terms of the agreement provide for the L.M.A. to supply technical assistance for locomotive manufacturing works in India, including technicians and skilled supervisory staff for the Chittaranjan Works near Calcutta, and train Indian technicians in Great Britain who eventually will replace those from Britain at Chittaranjan.

It is also part of the agreement that locomotive parts, castings, and components are to be imported from British locomotive manufacturers during the operation of the scheme. These imports will be reduced as the plant in India increases its own production, and will be eliminated when supply from home sources is sufficient to meet India's needs in full.

In consideration of the technical aid to be supplied by the British interest, and conditional on the attainment of annual output targets laid down in the agreement, India, during the currency of the agreement, is to place orders with British manufacturers for a total of 200 locomotives. It is estimated that the value of these orders will be approximately £7,500,000.

Details of the considerations which led up to the visit of the British Mission to India were given in our November 11 issue. The members of the Mission are Mr. Gerald Collingwood, Managing Director of the Vulcan Foundry Limited, and of Robert Stephenson & Hawthorns Limited; Mr. J. N. Compton, Chief Engineer, Yorkshire Engine Co. Ltd., and formerly head of the Standards Office of the Indian Railway Board; Mr. John W. Vaughan, Director & Legal Adviser of the Locomotive Manufacturers' Association; and Mr. Kenneth Cantlie, Overseas Representative, Locomotive Manufacturers' Association.

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### Southern Region Staff Conferences

SOON after the nationalisation of British Railways in 1948 Mr. John Elliot, the Chief Regional Officer of the Southern Region, inaugurated staff conferences throughout the Southern system. The idea behind this new departure was to bring management and men more closely together, to obtain a better understanding of mutual problems, and to enable any grievances or suggestions to be put forward. At these conferences Mr. Elliot has presided, and has had with him his senior officers. Apart from matters which come within the established machinery of negotiation, the staff have been at full liberty, and indeed have been encouraged, to raise any points they wish.

There can be no doubt that this innovation in staff relations has been a successful experiment, and one which has done much to foster pride in the job and goodwill among Southern Region employees. It has enabled members of the wages grades to establish a measure of direct contact with senior officers which otherwise would not be available to them. The officers themselves, in effect, may have to give an account of their stewardship, and the fact that no questions are barred makes for a free and easy discussion, and often enough results in the bringing to light of points which might otherwise remain hidden, and possibly cause dissatisfaction or a sense of grievance.

A great deal of the success of the staff conferences must be ascribed to the manner in which they are conducted by Mr. Elliot. He has a free and easy style which in no way detracts from his authority as chairman of the meetings, and a facility for getting to the core of a question, or eliciting the main point of a grievance. He has been the first to pay tribute to the large part which has been played by his officers in ensuring the success of these meetings. Their willingness to leave the fastnesses of their offices and face a barrage of questions on a wide variety of points of detail has been a new feature in the railway service, and one which, at least at first, must have engendered some private misgivings.

On Monday last one of these staff conferences was held at Brunswick House, Nine Elms. It was very largely attended, and questions and answers ranged over a wide variety of subjects covering matters as diverse as delays in repairs to



cranes; the future of the members of the Stock & Transfer Department; changes which it is suggested have been made in the supplies of kettles in certain signal boxes; increases in the numbers of supervisory staffs; payments to union officials for time lost in attendance at meetings, and so forth. By no means all the questions were confined to the personal interests of the speakers. One suggestion was put forward for retiming of certain trains, so that better connection facilities would be available to the public. Another speaker suggested that workmen's fares were too low, and were uneconomic from the point of view of the railways. Others drew attention to matters which were thought to reflect on railway efficiency, such as the getting back into service of empty wagons, and the collection of empties.

Monday's meeting was the last to be presided over by Mr. Elliot in the Southern Region, for on January 1 he is moving to Euston as Chief Regional Officer of the London Midland Region. These Southern staff conferences have been unique and are at least one item on which so far there has been no attempt to standardise practice throughout British Railways. Over the past two years they have succeeded in the objective that Mr. Elliot had in mind when he started them. They have proved a useful addition to more formal methods of staff relations.

### The 40-hr. Week on U.S.A. Railways

ONE of the biggest single problems that American railways as a whole have yet had to face arose on September 1 last when the new Federal law came into operation requiring non-operating employees to work no more than a 40-hr. week. In order to keep the cost of this change within reasonable bounds, drastic measures have become necessary. Many smaller passenger stations are closed altogether on Saturdays and Sundays; this does not mean that they cannot be used, but merely that tickets for journeys must be obtained in advance. Ticket-offices in the larger cities, other than those at the stations, also are closed, but most of the larger stations continue to function on the normal 7-day basis. At wayside stations in the U.S.A. the staff, often consisting of one or two employees only, in general have no responsibility in connection with the operating of the trains, which are under the entire control of the trainmen, and of the automatic or c.t.c. signalling, so that station closing does not involve any operating difficulty.

Goods stations on some railways are now closed without exception on Saturdays and Sundays. On other lines, the more important goods stations only remain open, particularly where perishable or other emergency freight, in full wagonloads requires to be handled. Most railways refuse to handle "less-than-carload" freight at week-ends. All the larger systems have had to take on new staff in considerable numbers to meet the passenger and freight emergency, ranging from 100 or so to 600 on the Delaware, Lackawanna & Western, 775 on the Reading, and probably well over 1,000 on some of the larger systems.

To keep the efficiency of track maintenance unimpaired is a greater problem still, and a variety of methods has been evolved by the various railways, as a result of careful planning in advance. These expedients include a lengthening of sections—though some railways have refused to do this—but also an increase in the number of section gangs which work on a straight five-day week. While some lines have increased the use of track motorcars and road motors and lorries, or plan to do so, so as to make their gangs more mobile, others, where union rules permit, are establishing "floating" gangs to assist on any length on which there is special need. In view of possible week-end emergencies, especially those due to exceptional weather conditions, the possibility has been canvassed by some railways of staggering the working week of their track gangs, but this idea presents great difficulties, and is unlikely to be pursued.

Regarding the forces used in bridge maintenance and in building, it has been found possible to make rather more elastic arrangements. While a straight five-day week will be worked in general, conditions often arise, especially in bridge replacement, where continuous working is essential to reduce interference with traffic to a minimum, and this is of advantage to the men also, if they are living in a construction camp away from home. Some lines have negotiated agree-

ments with the unions whereby men who work more than a five-day week, for the reasons given above, will be able to accumulate their rest days, and take them a week off at a time.

Careful planning of work programmes thus will minimise the difficulties arising on this side of the engineering work. To some extent, also, relief men are being used, as, indeed, they must be in such jobs as those of watchmen at level crossings, which must be manned seven days a week. The engineering forces have intimated to the operating departments that the latter can help the expeditious completion of relaying and other jobs to a considerable degree by "bunching" the trains while the work is in progress, and so cutting interference to a minimum.

Little information is available on the way in which the locomotive departments are meeting the problem of the 40-hr. week, but the tendency seems to be to run the heavy repair shops on a straight five-day week basis, and, as day-to-day locomotive maintenance must be carried on, the running maintenance and light repair depots on a staggered seven-day basis.

In the headquarters offices all possible steps are being taken to cut down work by more and more mechanisation. Complementary tape-controlled card punches and card-controlled tape punches simplify the transfer of records from one office to another; bookkeeping machines with synchromatic punches, payroll machines, photocopying and microfilming, electrically-operated typewriters, and many other modern developments are playing their part, together with the most elaborate ticket-issuing and ticket-accounting machines.

### Leopoldina Railway

THE report of the directors of the Leopoldina Railway Co. Ltd. for the year ended December 31, 1948, records continued falling off in the volume of traffic, due mainly to road competition which had grown quickly since the war. Despite efforts to save working costs, these increased by over 3 per cent., largely as the result of wage increases in conformity with the staff agreement of September, 1946, of strict interpretation of labour legislation resulting in heavy overtime payments, and of the rising costs of fuel and materials.

The following are some of the principal results:—

	1947	1948
	(thousands)	
Passenger journeys	30,452	28,188
Tonnage conveyed:		
Coffee	127	77
Sugar and cane	828	852
Bricks, sand, etc.	271	278
General	322	277
Total goods tonnage	1,945	1,833
	(£ thousands)	
Passenger receipts	1,127	1,101
Baggage and parcels receipts	319	274
Goods traffic receipts:		
Coffee	433	251
Sugar and cane	414	385
Bricks, sand, etc.	127	123
General	449	356
Total goods receipts	1,911	1,530
Gross receipts	3,468	2,923
Working expenses	3,595	3,713
Deficit	127	790

After adding to the deficit provision for amortisation of concessions, and deducting commissions, interest, etc., there remains a loss of £799,479, to which must be added liabilities of £393,371, postponed under the Scheme of Arrangement dated December 23, 1946, giving a loss for 1948 of £1,192,850. The debit balance brought forward from 1947 is £2,777,075, so that the debit balance carried forward to 1949 is £3,969,925. The rate of exchange adopted at the end of 1948 was Cr. \$75.44 to the pound; on devaluation of sterling in September, 1949, the pound/cruzeiro exchange rate was fixed at Cr. \$52.41 to the pound. The tax on remittances was re-established generally in January, 1948, at 5 per cent. No addition is made to provision for renewals, as the special surcharge of 10 per cent. on tariffs is destined entirely for this.

Under the Scheme of Arrangement, payment of interest on the 4 per cent. first debentures and 6½ per cent. terminable debentures (including arrears postponed under the previous scheme) has been postponed during the moratorium, which has been extended to January 1, 1950, and may be further extended up to two years; the date of repayment of terminable debentures has been postponed to the end of the mora-



torium period; and payment by the Leopoldina Railway Company of its liability in respect of the service of the Leopoldina Terminal Company debentures, including liabilities postponed, has been suspended until the expiration of the moratorium. The last payment of interest on the 4 per cent. debenture stock was on July 1, 1947.

The purchase agreement with the Brazilian Government, signed on April 30, 1949, which provides for sale of the railway and other fixed assets for £10,000,000, mentioned in *The Railway Gazette* June 3 issue, has radically altered the outlook. Ratification will necessitate a further scheme of arrangement between the parties concerned, and some time must elapse before an estimate can be made of the amount remaining after discharge of liabilities, on which the scheme of arrangement will depend. In Brazil, ratification is proceeding normally. Pending ratification, the railway, though owned by the company, is being operated by an administrator nominated by the Brazilian Government, and the cost of operation since May 1, 1949, is for account of the Brazilian Government, provided the agreement is ratified on the side of the company.

### Improvement of Track Formation

WHEN railways were first constructed, axle loads were light and traffic density low, but with the progressive increase in the weight and speed of trains, serious defects have developed in tracks laid on formations such as clay, silt, marl, and similar soils. The problems involved in maintaining a satisfactory track on unstable formations, and the remedial measures adopted, were considered in a paper by Mr. A. H. Toms, Southern Region, and Mr. W. F. Beatty, London Midland Region, British Railways, at a recent meeting of members of the Railway Engineering Division of the Institution of Civil Engineers.

The most troublesome soils are those which drain very slowly, and lose strength on absorption of water. A "fat" or highly colloidal clay will absorb a high percentage of moisture before its strength is entirely destroyed, whereas a much smaller amount of moisture may reduce a "lean" or loamy clay to slurry. Signs of breakdown in track formation become evident when the ballast becomes choked with mud, which pumps up round the sleeper ends during and after wet weather; the track drains become clogged with mud; plastic clay is forced up in mounds or ridges in the cess or 6-ft. way; tongues of clay appear between the sleepers in the 4-ft. way; and the track requires constant fettling. In severe cases, the drains may be pushed out of line by displacement of material from under the track.

Widely varying systems have been tried to remedy unstable tracks. The materials used have included locomotive ashes, sand, hoggins, ballast, chalk, slag dust, and oily waste, all deposited in layers of various thicknesses. In some cases, the results have been satisfactory, but in others, where the depth has been inadequate, or the type of base course unsatisfactory, further trouble has arisen. In recent years, it has become the practice to remove all overstressed and disturbed material, plus a margin for safety, and to substitute a blanket of materials with the best load spreading properties, with drainage as free as possible consistent with the provision of a sufficiently fine-grained layer in contact with the clay. A close study of soil mechanics is proving of material assistance in maintaining a first-class track in difficult circumstances, and the importance of a thorough investigation of the site, and of preliminary tests of the soil, is at once apparent.

The biggest range of problems arises on formation renewal work of the blanketing type. In the past, such work was generally done by man-power, but in recent years, mechanical plant has been used to a considerable extent, and is likely to be developed still further. The general problem is a joint operating and engineering one: the engineering difficulties arise from meeting traffic requirements, and the engineering work creates difficulties in traffic operation. Several methods have been devised for carrying out the work, ranging from short possessions, between trains, to complete possessions, with single-line working. During the past two years, typical major blanketing works for improving waterlogged formations have been undertaken on British Railways at Paddock Wood, Southern Region, at Denbigh Hall, London Midland Region, and at Hougham, Eastern Region. At Clapham Junction, Southern Region, where difficulties of a similar nature have

been encountered, and drainage arrangements were complicated, precast concrete slabs were laid between a blanket of quarry waste and the ballast.

Some interesting examples of overseas practice were cited by Messrs. Toms and Beatty. Considerable success has been claimed in America for pressure grouting, but tests of this process on British Railways have yielded variable results. Other American methods include driving a pointed "spud" at close spacing into the formation, and filling the holes with sand. It is claimed that this encourages drying out by capillary action, and compacts the track materials. In France and in Denmark, blanketing with sand has proved satisfactory. On the Netherlands Railways, fine sand or ashes are used for blanketing clay formations; but special measures have been called for to overcome the serious difficulties arising from deep-seated disturbances under tracks laid on low embankments across thick beds of soft peat. In Sweden, weak tracks have been strengthened with a continuous mattress of logs laid transversely under the ballast on a blanket of fir tree branches or a layer of fascines. On the Norwegian railways, dried peat has been used as a precaution against frost-heave.

### Design of Lightweight Rolling Stock

IN his paper entitled "Design of Lightweight Railway Rolling Stock" which he delivered before the Institution of Locomotive Engineers on December 14, Herr Kreissig, Technical Director & Chief Engineer of the Uerdingen and Dusseldorf Carriage Companies, said that lightweight construction in the field of transportation owed much to British aircraft designers, who had laid the foundation for the development of the most important aspect of the trend, the stressed skin or monocoque construction. The successful development of this method had encouraged rolling-stock designers to make use of it, and to adopt it to suit their own needs. At first, these new principles of design were confronted by old habits and ideas which, as is often the case, presented obstacles in the way of progress. In the past, commercial value of a design was usually assessed by its weight; experience has shown, however, that intelligent lightweight design leads to improved efficiency in operation.

To appreciate the basis of lightweight design it is essential to realise that old-fashioned considerations, based on statics and founded on the conception of force, do not meet the requirements of modern design. Those views have to be replaced by a dynamic conception based on work to be done. The "static" designer considered every detail as a separate unit, not as a part of the complete structure, and in case of failure usually considered any part which failed, and strengthened it, with consequent increase in weight. However, development proceeded from the "static" to the "dynamic" conception, rendered necessary by higher outputs, performance, and speeds; it was necessary, therefore, to consider all designs from the "dynamic" point of view, and to deal not with force, as in the case of "static" considerations, but with the ability to do the work. Should some section of the dynamically stressed units fail, then the designer should appreciate that its ability to do the work is insufficient, and must be increased.

The first and foremost, yet simplest, means to achieve this is to ensure that all stresses are adjusted to the given maximum value. Thus, the designer will increase the capacity to do the work of all low-stressed parts by removing redundant material; this will, in turn, increase the working capacity of the entire structure and its ability to withstand dynamic stresses. The author gave examples of the saving of operating expenses resulting from the adoption of lightweight design vehicles, and mentioned that express corridor-carriages built for the German State Railways in 1932 weighed from 45 to 47.5 tons, while the latest carriage of the same type weighs 27.8 tons, resulting in a saving in weight of 58 per cent. In our January 7 issue reference was made to the standardisation of rolling stock on British Railways; obviously, this must be a long-term policy, but apart from the advantages of standardisation offered by locomotives and their components, there is also considerable scope for the application of light alloys to the design of passenger stock and goods wagons. In view of the potential life of rolling stock, the adoption of lightweight vehicles would result in a considerable decrease in operating expenses, which are of a recurring nature.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Statistics as a Measure of Efficiency

Frognaal, December 5

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—In your November 25 issue, you mention Mr. Basil Smallpiece's suggestion that statistical targets might be set for the operating staff to aim at achieving. It is to be hoped that a plan of that kind will be tried on one or two sections of line where the officers in charge have a special aptitude for handling statistics.

There is always a danger of regular statistics being dealt with in a routine manner and any proposal for rousing fresh interest in the returns is worth a trial. Apparently many of the administration staff see the results for their own Region only. They would be put on their mettle if they had a reprint of British Railways operating tables from *Transport Statistics* at four-weekly intervals and saw what other Regions were doing. There is nothing like a healthy competitive spirit between districts or sections of line for improving operating performance.

Yours faithfully,  
R. BELL

### Trowse Accident

Monmouth School,  
Monmouth, November 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Having studied carefully the report in your November 25 issue on the accident at Trowse, Norwich, I am surprised to find no mention at all of the possibility of the offending train being returned to the correct (up) line through the crossover near Trowse Yard signalbox. The signalman there realised what was happening, and replaced his signals, when the train was somewhere between his up distant and up home signals. It appears, therefore, that he would have had ample time to reverse his crossover, and, with signals replaced, no interlocking would have prevented this simple movement. If this course was considered by the signalman but rejected because of the risk of derailment in taking the crossover at speed, surely the risk of head-on collision at speed was far greater.

One wonders why this elementary movement, which might easily have prevented an accident, was not apparently considered at the enquiry.

Yours faithfully,  
E. A. HARLE

### A Roundabout Goods Routing

The Old Manor,  
Salisbury, Wilts. November 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—The letter on roundabout goods routing of 1901 quoted by Mr. Munns in the issue of October 28 is interesting, but one is not quite so sure of the conclusions drawn from it. An increase of 77 per cent. in the route-mileage is certainly considerable, but at the time there was an alternative independent route; does this facility exist today?

Routing to secure a larger share of receipts? Has not the present "firm" monopolised and increased the "share" to something like 100 per cent.; the customers, the general public, are left with Hobson's choice.

Obvious superiority of operating considerations? As Rudyard Kipling's camel said to the yardmaster: "Hump"! Three instances (pre-nationalisation) occur to me:—

(1) A loaded wagon was despatched from one station to the next, seven miles away, where it was attached to a through freight train, a procedure which saved from 12 to 24 hours both to the consignee and in releasing the wagon. Apparently this was of no account; what did worry someone was that the wagon had travelled seven miles in one direction and then returned through the point of origin.

(2) It had been the custom for quite a considerable amount of goods to be despatched from a certain station at approximately 7 a.m. The railway suddenly decided to withdraw this facility. In vain did the traders point out that it was impossible to get the goods to the station in time for an earlier train and that the following train caused the deteriorated goods to arrive in the shops in the afternoon when the market was satisfied.

The traders then organised their own road transport, much to their own advantage. When the railway realised that they had lost every shred of traffic they offered to restore the

previous position, which was turned down with derisive laughter. To get anything at all they had to collect the goods, instead of it being brought to them, and convey it at a very much lower rate than previously.

(3) A colliery was developing some pits and approached the railway on the subjects of facilities and rates to the nearest port. The railway turned down facilities point blank and quoted a prohibitive rate. The colliery then applied for powers to construct its own ropeway. At the enquiry the railway objected on the grounds that its own line was adequate and had the colliery approached it, facilities and rates could have been arranged for the asking. A flat refusal to do anything of the sort being forthcoming, the railway was laughed out of court and the ropeway was constructed.

While admitting that advances have been made, one must include that much-maligned species of citrus fruit: the common lemon!

Yours faithfully,  
COURTENAY BARRY

### Railway Passenger Fares and Train Services

23, Somertrees Avenue,  
London, S.E.12. November 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—I had not overlooked the very early examples, quoted by Canon Fellows, in your November 25 issue, of fares in this country varying according to speed and class of accommodation provided, but I hardly thought them relevant to the present fares position, and, for the same reason I omitted all reference to "express fares," which actually lasted into this century and may still be said to survive in the special fare demanded for travel on Continental boat trains from Victoria. My idea, however, of a supplement payable on all express trains, over and above a much lower basic fare than today's, must not be confused with curious survivals of this nature, any more than with "high speed train" and Pullman supplements.

As a matter of historical interest, the "express fare" charged on the old L.N.W.R. by the "Irish Mail" in 1900 was only 4s. 6d. and 3s. 6d. (first and second class) for a single journey to Holyhead, compared with 7s. demanded for a boat train trip in either class from London to Dover. The day "Irish Mail" at 7.10 a.m. from Euston was then a most peculiar train as far as Crewe, for it was "first and second class only at express fares" in its Holyhead portion, first and third class only to Scotland, but a three-class train as far as Carlisle!

Yours faithfully,  
R. E. CHARLEWOOD

### Wagon Turn-Round

164, Turney Road,  
London, S.E.21. December 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—I see in your issue of December 2 that Mr. Roberts is again riding his favourite hobby-horse of the high capacity wagon, this time in connection with wagon turn-round.

The practice of storing coal in bulk on the ground before transport is not without its difficulties. In this country, unlike many others in the world, the question of space is vital, and I doubt greatly whether the use of even half the area of a colliery sidings would accommodate more than a few hours' production from a modern pit, especially when one remembers that, for safety reasons, it cannot be stored in very deep stacks. Added to that would be the not inconsiderable cost of stacking and picking up again—I believe about 1s. 6d. per ton at one colliery in the north-east, which is fully equipped to do so—and the breakage of coal inevitable with further mechanical handling.

Precisely what the Coal Board can do about the capacity of coal wagons is not clear. With nationalisation, all privately owned wagons used for coal carrying became the property of the B.T.C., so that the only wagons it still owns—apart from those on its longer private lines, as in Northumberland and Durham—are purely for internal colliery use and obviously can have no bearing on the question of wagon shortage. Quite apart from any question of the ideal capacity the problem of wagon shortage is surely one of worn-out stock, shortage of materials for replacements, and similar economic troubles which the introduction of completely new designs for high capacity carrying would merely aggravate.

The railways are the servants of industry. A few collieries and works may be capable of handling 50- or 60-ton wagons, but what use is that when a vast majority are quite unable to do so, or to spend large sums adapting their premises? It would be interesting to hear the views of the London coal

merchant quoted by Mr. Roberts on a proposal that he should receive his supplies in 50-ton lots; even with the existing "toy trucks" the trouble has been to persuade merchants to unload them quickly enough because 10 tons or so is more than a small man wants in one delivery.

All efforts of the operating departments are bent at present towards the task of keeping wagons in full use. I am sure that if Mr. Roberts would devote his energies to recording full particulars of the "hundreds, or thousands, of wagons which stand for days, or even weeks, congesting the sidings" and send them to the District Officer concerned he would earn much more gratitude than do his vaguer and wilder assertions.

Yours faithfully,

TRAFFIC APPRENTICE

## Standard Locomotives in India

Southborough, December 1

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read with interest your article under the above heading in your issue of December 2. There are, however, two points regarding the table published with it, about which further information, I think, would be appreciated by your readers.

Among the 5 ft. 6 in. gauge engines, there are 18½-ton and 16½-ton-axle-load passenger types, presumably for use on main and on secondary and branch lines, respectively. There is also an 18½-ton standard goods type, but there appears to be no goods engine suitable for working over the lighter rails of the secondary and branch lines. Is no such type contemplated, and if not, what engines are to be used in these very numerous services?

Also, in the unusual 2-10-6 tank heavy shunting broad- and metre-gauge designs, is the "6" a six-wheel bogie under the bunker? Incidentally, one wonders why such a massive type is required on the metre-gauge system. The 5 ft. 6 in. gauge shunters could presumably be used as pushers on the Bolan and other ghat sections, as well as in hump yards, but a ten-coupled engine, even with one or more flangeless pairs of wheels, seems likely to present difficulties on metre-gauge curves, both horizontal and vertical, on ghats, and also in shunting yards.

Yours faithfully,

F. S. BOND

## Travel in France

6, Oak Villas, Manningham Lane,

Bradford, October 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Having recently spent a short holiday in Savoy and on the Riviera, I was interested to read Mr. J. E. L. Skelton's comments in your October 14 issue. From my own observations during an identical mileage of travel on the Northern and South-Eastern Regions I can endorse his remarks. On my journeys I was only once late in arriving at my destination; on this occasion 15 min. of a 22 min. late start was recovered by a Chapelon 4-6-2 locomotive hauling a 600-ton train on the Boulogne-Paris boat train, and, but for signal and permanent way delays we should have arrived in Paris practically on time. On this journey the net time of 136 min. from Etaples to Paris (140.6 miles) was 18 min. inside the 154 min. schedule, which itself demands an average speed of 55 m.p.h. from start to stop.

That punctual working has been established as the rule rather than the exception on the S.N.C.F., is a high tribute to the keenness of the locomotive crews and the excellent standard of mechanical maintenance of their locomotives, on which steam blows are almost completely absent. The fast running made on several routes, the haulage of heavy trains on others, with locomotives no larger than those used here, and the overall high standard of punctuality are the more remarkable in view of the poor general quality of fuel. Moreover, the majority of French main-line passenger locomotives have narrow fireboxes. It is also interesting to compare the grate areas of the Collin and Chapelon 4-6-2 and Chapelon 4-8-0 locomotives, 37.7, 49, and 40.5 sq. ft. respectively, with the 50 sq. ft. of the latest British Pacifics with wide fireboxes.

With electric traction, practically all the overhead structures for the Paris-Dijon electrification of 195 route-miles, a considerable amount of which is quadruple track, have been completed and this line will be turned over to electric operation in the New Year. Considering post-war difficulties, to have pushed through such a large scheme in such a short time shows very energetic direction of affairs, although the extension of the electrification over the 122-mile Dijon-Lyons section appears to have been suspended for the time being because of economic difficulties.

The extensive use of diesel railcars and trains for fast city-

to-city services, cross-country routes, and to provide good connections with main-line trains on lesser routes, appears to provide one answer to road competition and high operating costs. On many branch lines all, or practically all, passenger traffic is handled by railcars. I travelled by one cross-country service, the 8.20 a.m. from Grenoble to Digne, which covers 123 miles of steeply-graded route, mainly single track, in 4 hr. 12 min., with 26 intermediate stops, the end-to-end average speed being little below 30 m.p.h.

Fares are cheap, third class at just over a penny a mile and second about 1.65d. a mile (at the new exchange rates). All fares are calculated at the flat rate on a mileage basis, with no reduced rate for return tickets.

The speed of the main-line *rapides* and expresses is similar to that here, although some of these trains load very heavily, especially on the line from Paris to Marseilles. In addition to the ordinary *rapides* there are high-speed business services once or twice a day over most of the principal main lines, scheduled at considerably faster speeds than at present run here. They are restricted to first and second class passengers (the latter pay a fare equivalent to British third class monthly return) and small supplements are charged.

On the Eastern Region there are two special *rapides* which cover the 312 miles between Paris and Strasbourg in 315 min. in each direction, including stops at Bar-le-Duc and Nancy. They are steam hauled and are scheduled over the 157.5 miles from Paris to Bar-le-Duc in 145 min. at an average speed of 65 m.p.h. Between Paris and Basle, 326 miles, a fast railcar averages exactly 60 m.p.h., including intermediate stops at Belfort and Mulhouse. The 276 miles between Paris and Belfort are covered non-stop in 260 min. in each direction.

The "Flèche d'Or" covers the 184.4 miles between Paris and Calais Maritime in 190 min. Between Paris and Lille, 156 miles, there are two fast diesel trains in each direction which cover this distance in between 147 and 159 min., with two or three intermediate stops. The fastest intermediate bookings are Arras-Paris, 119.5 miles in 105 min. (68 m.p.h.), and Paris-Amiens, 81.2 miles in 73 min. (67 m.p.h.). There are also two fast steam-hauled *rapides* between Paris and Lille which take between 170 and 180 min. with two or three stops, their fastest bookings being Paris-Arras in 121 min. (59.3 m.p.h.) and Paris-Longueau, 78.3 miles, in 81 min. (58 m.p.h.). On the Brussels and Liège lines the overall times suffer from slow running on the Belgian side of the frontier, but the "Meuse-Sambre" diesel train covers the 95.1 miles between Paris and St. Quentin in 84 min. eastbound and 88 min. westbound. The steam-hauled "Nord Express," which carries passengers of all classes, covers the Paris-St. Quentin section in 96 min.

On the South Western Region electric traction is responsible for the very fast 7.35 a.m. from Bordeaux to Paris, which covers the 362.9 miles in 355 min. with two intermediate stops. The 209.1 miles from Paris to Poitiers are covered non-stop in 197 min. southbound and 198 min. northbound. Over the 73.9 miles from Paris to Les Aubrais the fastest times are 74 min. southbound and 72 min. northbound, with a number of other trains in around 75 min. All these runs are by ordinary *rapides*, electrically operated.

Electric traction is also responsible for four runs on the Western Region between Paris and Le Mans, 131 miles covered in 130 min., and three over the 121 miles between Le Mans and Versailles in 119 min. On the Paris-Le Havre service, 141.5 miles, there is a fast railcar taking 128 min. northbound and 127 min. eastbound, the 86.6 miles between Paris and the intermediate stop at Rouen being covered in 78 and 76 min. respectively. There is also a fast steam *rapide* taking 159 min. northbound with three stops and 149 min. southbound with one stop only. With these trains the times between Paris and Havre are 87 min. north and 85 min. southbound.

On the South Eastern Region there is a fast morning diesel train from Lyons to Paris at 8.30 a.m. covering the 317 miles in 307 min. non-stop. This train returns from Paris at 6.25 p.m. to the same schedule. Between Paris and Marseilles, 536 miles, there are fast midday trains in each direction, steam hauled, their schedules being 10 hr. 17 min. southbound and 10 hr. 30 min. northbound, with four intermediate stops.

Yours faithfully,

GEORGE W. CARPENTER

SAN PAULO (BRAZILIAN) RAILWAY.—The revenue brought in for 1948 amounts to £101,933, to which is added interest on deposits and investments of £11,032. The revenue for 1947 was £256,811 and interest amounted to £13,386. After transferring the sum of £300,000 from general reserve and deducting a total charge on net revenue account of £238,261, the balance carried forward amounts to £195,934, as compared with £21,230 brought in.



## The Scrap Heap

AMBULANCE EXAMINATION SUCCESS IN THE LONDON MIDLAND REGION

Successful candidates passing British Railways, London Midland Region, ambulance examinations during the past year numbered 6,293, which is an increase of 825 over the previous 12 months and a post-war record. There are 5,595 members of the staff of the L.M.R. now holding long-service medals, and among them there are nine with the 45-year bar.

### 100 YEARS AGO

From THE RAILWAY TIMES Dec. 15, 1849

#### LONDON TO PARIS IN EIGHT HOURS AND-A-HALF.

THE remarkable feat has been accomplished of effecting a communication between London and Paris in the space of eight hours and-a-half, demonstrating that which we have so repeatedly urged—the great superiority, in a commercial point of view, of the route *via* the Boulogne and Amiens Railway, as compared with the Great Northern, for the conveyance of the continental mails. It will be recollected that at the recent meeting of the English proprietors in the Boulogne and Amiens Railway a deputation was appointed, consisting of Messrs. Wright, Ivyleafe, and Potter, to proceed to Paris with a view to promote the restoration of the mails to the direct route *via* Boulogne, and accordingly arrangements were made to test the time in which the distance could be performed. The Paris correspondent of the *Times* writes under date of Tuesday, six p.m.:

"Much astonishment was created amongst the public here by the arrival of the *Times* of this morning at half-past one o'clock this day in Paris. The Bourse was actually in amazement, and the speculators could scarcely credit their eyes when the Commissary exhibited to the astonished crowd the copies he had just received, and which came by express *via* Folkestone and Boulogne.

#### THE SAFEST SPEED

Private firms in Western Germany have been asked to co-operate in a road safety campaign. Some have been doing so with an enthusiasm which has embarrassed the authorities. One company in Hamburg has erected a large poster in the city, saying:—

#### DRIVERS!

Go at Civil Service speed.  
—From "The Glasgow Herald."

#### ATTRACTIONS OF NORTHERN IRELAND

The attractions that Northern Ireland has to offer to tourists are known in far-off India. A quaintly-worded postcard arrived at the G.N.R. office, Belfast, recently, from Trichinopoly, Madras Province, which read as follows:—

"May we introduce ourselves as a group of students who have decided to come on a tour to the Northern Ireland as well as the British Isles. We will be completely lost in the grandeur of scenic beauties and mountainous pictures. We will find sporting, golfing and fishing interesting. Since we wish to give a thorough trip in your country and for our convenience sake, we request you to mail at once descriptive booklets, illustrated guides and other reservations facilities, together with all route maps, to my address."

In response to the postcard, which was addressed to Mr. G. B. Howden, the G.N.R. is sending some of its own literature as well as Ulster Tourist Development and Irish Tourist Association leaflets.—From the "Belfast News-Letter."

#### LOST MILLION

A million a year is lost in unpaid railway fares, said a solicitor at Norwich when a man was fined £2 for travelling without paying his fare.—From the "News Chronicle."

#### 3,000,000 PASSENGERS ON PORTSMOUTH-ISLE OF WIGHT SERVICE

Since the beginning of the year the Southern Region of British Railways has conveyed 3,000,000 passengers between Portsmouth and the Isle of Wight.

The three millionth passenger travelled on Wednesday, December 7, by the 12.35 p.m. service from Portsmouth to Ryde on the m.v. *Brading*, and was presented by British Railways with a memento to mark the occasion.

The presentation took place at Ryde Pier Head, and was performed by Lt. Colonel C. L. Ellery, Chairman of the Isle of Wight Publicity Council.

#### COURIERS AT LIVERPOOL STREET

To assist travellers with their "on the spot" enquiries, the Eastern Region of British Railways has provided two information couriers at Liverpool Street.

At most railway stations, and particularly at the London termini, there are invariably travellers with an enquiry to make in relation to their immediate movement such as: Where does one change for...? What platform does the 3 p.m. leave from? Is there a restaurant car on this train? Where is the ticket office, left-luggage office, or where can I send a telegram? How do I get to Victoria, Kings Cross, or Euston?

The couriers, who wear a distinctive uniform and an armet bearing the word "Information" in bold letters, patrol the platform and concourse, and in the course of a day answer many questions. They are equipped with pocket timetables and reference books, including a London street

guide, and in addition to directing outward bound passengers to their trains, are able to assist those arriving by train to proceed to their destinations.

#### "MERITS OF THE RAILBORNE VEHICLE"

A correspondent suggests that recent letters appearing in *The Railway Gazette* on the above subject have revealed a certain narrowness of vision. "Why stop," he asks, "at front gardens? Think of the advantages to the householder living on the left of the road, facing town, if the trams were run right through his front parlour and hallway. So long as he was nimble, he could leap on to a passing tram right from his breakfast table, and, on returning home, drop from the moving vehicle to a hot supper."

#### LOMBARD SEPTUAGENARIAN

In 1879, Mr. Stroudley turned out from Brighton one of his six-coupled side tanks which he named *Lombardy*; it was numbered No. 139. During the first decade of this century, No. 139 was shedded at New Cross, but with its sisters it stirred me as a small boy to interest in geography. Where was Lombardy and what did her sister's name *Burgundy* stand for—Burgundy means other things to me as well as Dukes?

The Southern Railway placed a "B" in front of 139 to denote a Brighton loco., and later added the digit 2; thus, 139 *Lombardy* became 2139, and it had, of course, lost its name. Today *Lombardy* is shunting at Lovers Walk, Brighton, within a mile of where she was born and named 70 years ago; also, she carries the No. 32139 to show national ownership.

Shortly we may have a European railway system and doubtless *Lombardy* will become 932.139, for Britain may be allocated the 900,000s for its locomotives. But maybe there will be a world railway system within our time, and the European system locomotives will be given the first million numbers, hence *Lombardy* will carry the number 1,932,139. But will her bunker cab be large enough to carry this new number, or will *Lombardy*, having reached her 80th year, return for scrapping to Brighton?—BM/BA6F.

#### A THOUGHT FOR XMAS EVE

For all who work while others sleep  
And faithfully their vigils keep,  
For nurses, watching through the night  
To keep life's flickering flame alight,  
For soldiers at their lonely posts  
And the brave souls who guard our coasts,  
For engine crews and those who toil  
To bring the wealth of sea and soil  
To our great markets every night,  
That we may eat in morning light,  
For control clerks, to whose good sense  
We trust our trains with confidence,  
For fogmen, who, in times of stress,  
Relieve our sense of helplessness,  
For night-fliers, who needs must roam  
Across the heaven's spangled dome,  
For all who labour through each hour  
To give us light and heat and power,  
For those who keep us well supplied  
With news of happenings far and wide,  
Even for Santa, who, just now,  
Is wiping sweat from beaded brow,  
For policemen, postmen, bakers, too,  
Who have to toil the long night through,  
For shepherds, sailors, signalmen—  
Especially for signalmen  
Who keep the nation's life-lines clear—  
Thy blessing, Lord, and Thy good cheer!

A. B.



Eastern Region courier dealing with an inquiry at Liverpool Street (see paragraph above)

# OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

## RHODESIA

### Bulawayo Platform Lengthened

Bulawayo Station platform is being lengthened to approximately 2,422 ft., making it the longest in the world, so far as can be ascertained.

### Petrol Tank Wagons to Carry Water

It is announced that 15 petrol tank wagons are being used as water tankers to supply railway requirements made urgent by the drought.

## SOUTH AFRICA

### Kakamas-Upington Line

Despite a shortage of materials, good progress is being made with the conversion to 3 ft. 6 in. of the narrow-gauge line between Kakamas and Upington, and it is expected that the work will be completed by the end of the year or early next year. The work began last year, and the existing cuttings and banks have already been widened for a distance of 48 miles. This is 85 per cent. of the ground work on this 55-mile line. Sleepers have been laid for 25 miles, and substantial progress has been made with the station yards and sidings at Klippunt, Bloemsmond, and Kiemoes.

The conversion of this line, which serves an important agricultural area, will promote its further development and enable the railways to cope with its steadily increasing production. The rich farm lands west of Upington, which are irrigated by the Orange River, produce 90,000 tons of lucerne hay, nearly 8,000 tons of wheat, and 4,000 tons of raisins and other produce every year. The narrow-gauge line has served this area since 1926, but with increasing traffic which has all to be transhipped at Upington, delays have been unavoidable and special staff has had to be retained. The widening to the 3 ft. 6 in. gauge will make operating much easier and speed up the delivery of consignments to their destinations in other parts of the Union.

### Cape Eastern Main Line

The construction of what is almost a new main line between East London and Queenstown has now been completed. The construction was undertaken to allow greater speeds than were possible on the old line, the use of heavier engines, the shortening of the route, and to obviate the necessity for restricting loads. The old Cape Eastern main line was built in 1880, but the subsequent increase in the volume of traffic made necessary the relaying and re-location, which has now been completed for a distance of 153 miles inland from the port. The new track has been laid to main-line standards with 96-lb. rails.

The time taken to build the new line, about 14 years, can be ascribed to the effects of the war and the consequent shortage of labour and materials. The total cost of this section was £3,400,000, of which £2,700,000 was expended on the mountainous region, about 88 miles in length, between Amabele and Imvami.

The deviations and other improvements included in this major construction work included the building of 13 tunnels with a total length of 19,426 ft., the shortening of the section by 19½ miles, reduction in curvature, and a reduction in the rise

and fall of 2,300 ft. Two of the longest tunnels are between Cathcart and Goshen, one, Hobbs Hill Tunnel, being 3,202 ft. in length.

The deviations made necessary the building of ten new stations, and excavations and embankments involved the moving of a total of 8,000,000 cu. yd. of earth and rock. The erection of bridges, culverts, and tunnels took 164,000 cu. yd. of concrete. Thirty public and four private level crossings were replaced by bridges or subways, and others have been eliminated as a result of deviations and tunnels. The grading of the line has been improved from 1 in 40 uncompensated to 1 in 50 compensated and it can now take the heaviest engines operated by the S.A.R. The next major undertaking in this part of the country is the deviation between Dreunberg and Burghersdorp.

## EGYPT

### Financial Results for 1948-1949

During the financial year 1948-1949, the State Railways carried a total of 52,087,040 passengers, 8,395,323 tons of goods, and 508,322 head of cattle, as against 46,985,811 passengers, 7,907,246 tons of goods, and 545,958 head of cattle in the previous year. The total receipts were £13,264,905, compared with £11,337,094, and total expenditure £11,389,121, against £10,046,965.

### Simplified Rate Book

In view of the difficulties which have long been experienced in finding out the correct rates for the various commodities due to the present complex tariff books, a scheme which aims at simplifying rate calculation is being studied. It is hoped that it will be of great help to both railwaymen and traders.

### Rates and Fares on Sinai Railways

It has been decided to apply the State Railways schedules of rates and fares to the Sinai Railways (Kantara-Rafa) instead of Palestine Railway schedules which since taking over the section from the Palestine Railways, have remained in operation. Rates and fares for the section Rafa-Gaza will remain at the present schedules based on Palestine tariffs.

### Station Buildings and Bridges

The new building at Sidi-Gaber Station, 2½ miles south of Alexandria main station, has recently been completed and brought into use. The rebuilding of Kafr-el-Zayat Station and one of the Nile bridges to replace the old structure are nearing completion, and will be ready for traffic shortly.

It has been decided to construct a modern station building at Port Said. The scheme will entail much modification to the layout and platforms, and will cost roughly £150,000, of which £57,000 is for the station building.

### Progress of New Works

The new Dessuk-Foa-Metoubis line which is now being constructed from Dessuk to Metoubis, will provide a direct route from Lower Egypt to Edfina and Rosetta, instead of the hitherto present lengthy detour via Gabbary. The works on the line are being pushed ahead to meet the urgent demands of traffic, especially materials required for building Edfina Barrage. The total cost of laying

the line is approximately £170,000. The expected saving in working traffic by the new cut-off will outweigh the capital cost involved.

The doubling of the section from Ein-Shams-Marg on the Cairo (Pont-Limoun)-Marg suburban line has now been put in hand and is expected to be completed within the next few months. The completion of this doubling will obviate the present operating difficulties and delays to trains arising from the heavy traffic now dealt with.

It is also expected to complete the extension from Capuzzo to Sollum, the Egyptian frontier on the Western Desert, within the next few months. A proposal to extend the Damietta line from its present terminus at Damietta to Ras-el-Bar, a seaside resort on the Mediterranean, is now under consideration.

## ARGENTINA

### Increases in Buenos Aires Urban Transport Fares

On November 11 the Ministry of Transport, which recently assumed control of passenger transport in the city of Buenos Aires, made several adjustments in fares. The minimum rate of 10 centavos is retained where it already exists, but the distance one may travel for that amount is considerably reduced. Five centavo workmen's tickets on trains and buses and 15 centavo transfer tickets between underground and surface lines, and *vice versa*, have been abolished. Apart from these measures, passes for employees are no longer available in microbuses.

### Motorman Responsible for Accident

The enquiry held to establish the cause of the serious accident—involving the death of 18 passengers and injuries to 73 others—which took place near President Perón Station, General Mitre Railway, on October 11 (see *The Railway Gazette* of November 4), places the responsibility on the motorman, who had handed control of the train to an apprentice who was travelling with him, in spite of the fact that the apprentice was not qualified to drive and that the track layout and signalling in the section in question are complicated. Both the motorman and the apprentice have been dismissed for this grave breach of regulations.

## IRELAND

### Large Grant to C.I.E.

On November 30 the Dail voted a supplementary estimate of £4,091,000 for Coras Iompair Eireann. As stated in our December 2 issue, the estimate is to meet commitments of the company which have to be discharged before March 31 next. It is made up of £770,000 for interest on debentures; £857,000 for working losses; and £2,464,000 for capital expenditure.

The third item includes new buses, lorries, and wagons, permanent way renewal, and expenditure on new premises, Diesel locomotives and on various projects which, although not carried out, involved the company in payments to architects, engineers, and so on.

### Financial and Traffic Prospects

Mr. Morrissey, Minister for Industry & Commerce, said that the company would undertake no capital works unless essential or unquestionably remunerative.

The estimated loss for 1949 was £1,078,000, an improvement of about £326,000 on 1948. The company had

secured the services as consultants of several transport experts and there was a reasonable belief that with their aid and advice services would be improved and traffic regained. The rolling stock was capable of handling more traffic. The levels of rates and fares would be kept under constant review.

Mr. Morrissey said that improvement in finances could be achieved only by attracting additional traffic and by economies in operation. He proposed to make, on a gradually declining scale, provision in the annual estimates for the company's losses.

## SWITZERLAND

### Winter Service on Jungfrau Railway

For the first time since its completion in 1912 the Jungfrau Railway will have a winter service of one daily train each way. Additional trains are to be placed in service towards the end of February, and special services are to be operated on the lowest section, from Kleine Scheidegg to Eigergletscher, 6,560 ft., during the Christmas holidays. Winter working is facilitated by the fact that almost the whole line is in tunnel.

### Architectural Competition for a Station Building

The construction of a new station building at Sion on the Simplon line has been made the subject of an architectural competition, the results of which are reported in the *Bulletin Technique de la Suisse Romande*. Five of 66 projects submitted were awarded prizes. The general standard of the contest, which was open to all Swiss architects resident in the French-speaking cantons and to all architects

born in the canton of Valais, is described as most satisfactory. Nevertheless none of the projects is recommended for final adoption without modification. Local circumstances make it difficult to fulfil, at the same time, the requirements of railway operation, street traffic, town planning, and aesthetics. The first prize was awarded to Monsieur E. Béboux, Lausanne, for a project that is described as "good and simple."

## FRANCE

### Railway Deficit

The Minister of Public Works & Transport, M. Pineau, recently estimated the deficit of the French National Railways for 1950 to be fr. 84,000 million (or nearly £84,000,000). The budget subsidy would provide fr. 50,000 million, he said, and fr. 10,000 million would be found by economies and S.N.C.F. staff reductions. The balance would have to be raised by increasing railway passenger and freight rates. He based his argument on a comparative table, which showed that railway rates were lagging behind the general rise in wages and costs. The Paris Passenger Transport Board deficit of fr. 4,000 million should, he said, be met by increasing the fares of the Paris Métro and the buses under the control of the Board. These suggestions have not yet received Government approval.

### Road Hauliers Protest

The rail and road co-ordination measures are opposed by road hauliers. The National Federation of Road Transporters at its recent annual congress protested strongly against the proposed taxes on road transport, accusing the Govern-

ment of favouring the S.N.C.F. The Federation resolved to withdraw its delegates from the Transport Supreme Council, urging that every effort be made to obtain a revision of the co-ordination decree, and advising all road transport undertakings to cease buying cars and lorries, so as to limit their risks. M. Pineau, who was present as chairman, defended his decree and asked the Federation not to withdraw from the Council; he also announced that petrol would shortly be on sale without restriction. Other objections were raised to the schedule of new taxes as a menace to road transport and consequently to the French automobile industry.

## GERMANY

### Large-Scale Sleeper Programme

The present sleeper renewals programme of the Federal Railways entails the supply of 1,400,000 sleepers as part of a special purchase and financing programme. Deliveries are spread over the whole of 1950, and the total cost has been estimated at DM. 21,000,000, about £1,787,200.

### Reduction of Fares for Displaced Persons

A proposal submitted recently to the West German Federal Council envisages the extension of the 50 per cent. reduction in railway fares and fares of the postal road services at present available to all Germans displaced from Western Germany to all refugees and their children now living in Western Germany. The reduction is granted on application once every three months for visits to be paid to parents or relatives.

## Publications Received

**Tandem Compound Locomotives.**—A Historical Review. By P. M. Kalla-Bishop. London: Kalla-Bishop Books, 4, Temple Fortune Court, N.W.11. 8½ in. × 5½ in. 70 pp. Illustrated. Paper covers. Price 5s. 6d.—The author provides an interesting historical survey of the development of the tandem compound locomotive dating from the middle of last century. The various locomotives are described in chronological order and the subsequent fate of each is shown. We are told that the last tandem compound locomotive was in service on the French railways and was withdrawn from traffic in 1947 for breaking up. Comment is made on any unusual features in the various designs and there is a table of principal dimensions which gives a clear idea of the characteristics of the various engines.

**Struttura Economica e Tecnica delle Tariffe Ferroviarie.** (The Economic and Technical Structure of Railway Tariffs). In two volumes. By Francesco Santoro. Milan: A. Giuffrè. 10 in. × 7 in. 762 pp. Paper covers. No price stated.—In the first volume, Dr. Santoro, an official of the commercial department of the Italian State Railways headquarters, deals with the principles of goods tariffs as applied to the Italian State Railways, discussing the many aspects clearly and succinctly both in theory and (Italian) practice. The second volume deals with exceptional rates, parcels, door-to-door, and other services. Chapters on the Italian export and transit freight tariffs are of special interest to non-Italians, especially the relative reluctance of the Italian authorities in the

past to manipulate railway rates to favour their own railways and ports as compared with pre-war German practice. Road competition is discussed at length. The book was written before the basic revision of railway rates in 1949.

**High Level Tyneside Song Book.**—In connection with the recent Newcastle High-Level Bridge centenary, Joseph Lingford & Son Ltd., the Model Factory, Bishop Auckland, has produced this 22-page booklet of Tyneside songs. Proceeds from the sale of the booklet, which costs 6d., are being given to railway charities.

**The Modern World Book of Railways.** By Paul Townend. London: Sampson Low, Marston & Co. Ltd., 25, Gilbert Street, W.1. 10½ in. × 8½ in. 160 pp. Illustrated. Price 8s. 6d.—The difficulty of producing a book on a technical subject, which readily will be intelligible and interesting to the younger generation, without reducing the subject-matter to absurdity, is all too often unappreciated. By an approach that in some ways is novel this book overcomes much of this difficulty, though, unfortunately, it is marred by a number of inaccuracies. There are some 300 illustrations and though the fundamental emphasis is on Britain, due notice is given to various foreign railways.

**Pilferage.**—The London Chamber of Commerce recently held a conference to discuss theft and pilferage. The conference was attended by representatives of 25 organisations including the Railway Executive and the Dock & Harbour Authorities Association; the Road Haul-

age Executive also co-operated. A co-ordinating committee has now issued a booklet entitled "Pilferage" to explain how certain precautions can reduce the opportunity and also the reason for theft. Illustrated with humorous drawings, the booklet briefly describes what has been done already to combat pilferage, by the police and by transport agencies; what is being done now by the co-ordinating committee; and what the manufacturer and supplier can do. There are hints on labelling, packaging, documentation, and so on, with some special points for the exporter, such as the tendering of cargo to the docks not before the agreed receiving date. Reference is made to the British Standard Packaging Code which was mentioned in *The Railway Gazette* September 9 issue.

**Seventy-Five Years Progress of Japanese Government Railways.**—This booklet, issued by the Japanese Government Railways, summarises their development since the first railway, the Shinbashi-Yokohama section, was opened in 1872, four years after the Meiji Restoration which inaugurated the modernisation of Japan. There are copious statistics, and much historical information. Automatic colour light signalling was introduced in 1915, the first electric locomotive in 1912—the beginning of extensive electrification in a country where conditions are peculiarly favourable to electric traction. A chapter on train speeds shows the effects of intensive industrial development in the 1930s and of what are termed the "China Affair" and the "Pacific War." Despite the present adverse financial situation, plans for future development are ambitious.



## Bagnall 0-6-0 "400" Class Tank Engines

*Supply of three shunting engines with outside cylinders and Walschaerts valve gear*

AN order for three 0-6-0-type saddle tank locomotives for the Steel Company of Wales has been placed with W. G. Bagnall Limited, Castle Engine Works, Stafford. The locomotives have been designed to meet the special requirement of the Steel Company of Wales, and are required to haul a load of 325 tons, consisting of five ladles of 65 tons gross each, up an incline of 1 in 100. Special consideration was given to certain aspects of the design of the locomotives; because of the track layout in the steel works, it was necessary to obtain maximum tractive effort on a minimum fixed wheelbase to avoid tyre wear as much as possible, since the locomotives have to negotiate 170 ft. curves.

The locomotives have outside cylinders and Walschaerts valve gear; by this arrangement the running gear is readily accessible for periodic inspection and carrying out any repairs which may be necessary, without recourse to a pit, and will enable the locomotives to remain in service for long periods without undergoing repairs. The locomotive frames are of mild-steel plate  $1\frac{1}{2}$  in. thick securely braced by cross-stays riveted together using  $\frac{7}{8}$  in. rivets; the buffer beams are

of 3 in. steel plate stiffened by gussets and extend to within 5 in. of the rails.

The slide bars are of the double-bar type, to be made of a high-quality tensile steel and hardened by the Shorterising process; the connecting and coupling rods are forged from the solid, the big end of the connecting rods, and the coupling rods having floating bushes of gun-metal and lubricated with hard grease. The crank-pins are made of Nitralloy steel. The axleboxes are cast steel fitted with heavy gun metal bearings and are fitted with manganese steel liners; the axlebox guides are also of cast steel fitted with manganese steel liners. Lubrication is provided by a Wakefield 14-feed mechanical lubricator.

The boiler is of round-top design and has a steel firebox. The barrel, 10 ft. 3 in. long, is manufactured in two courses, the smaller being 4 ft.  $1\frac{1}{2}$  in. inside diameter. The firebox shell is 6 ft. long by 4 ft. wide outside the foundation ring, the inside dimensions being 5 ft.  $4\frac{3}{4}$  in. long by 3 ft.  $5\frac{1}{2}$  in. wide at the foundation ring. The saddle tank is of arc welded construction.

Various features unusual in industrial shunting locomotives, which have been incorporated in the design, include the

hopper-type ashpan, rocking grate, and self-cleaning smokebox. The brake rigging is forged from the solid, and wearing parts are case-hardened; two brake blocks are fitted to each hanger. Lambert wet sanding gear and an Owens balanced regulator valve also have been incorporated.

Recently ten 0-6-0 tank engines for continuous heavy-duty yard shunting were completed at Swindon Works, to the design of Mr. F. W. Hawksworth, Chief Mechanical Engineer, British Railways, Western Region, reference to which was made in our issue of October 21. They differ from previous practice on the Western Region, having outside cylinders and Walschaerts valve gear. As a matter of interest we give the leading dimensions of both designs which are as follow:—

	Bagnall "400" Class	Western Region "1500" Class
Wheel arrangement	0-6-0	0-6-0
Coupled wheels dia.	4 ft. 3 in.	4 ft. $7\frac{1}{2}$ in.
Cylinders	18 in. $\times$ 26 in.	17 $\frac{1}{2}$ in. $\times$ 24 in.
Boiler pressure	180 lb. per sq. in.	200 lb. per sq. in.
Heating surface		
Firebox	100 sq. ft.	101.7 sq. ft.
Tubes	855 sq. ft.	1,245.7 sq. ft.
Total	955 sq. ft.	1,347.4 sq. ft.
Grate area	18.7 sq. ft.	17.4 sq. ft.
Tractive effort at 85 per cent. boiler pressure	25,272 lb.	22,515 lb.
Water capacity	1,500 gal.	1,350 gal.

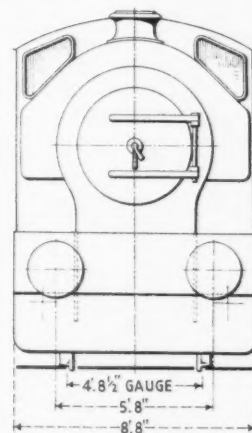
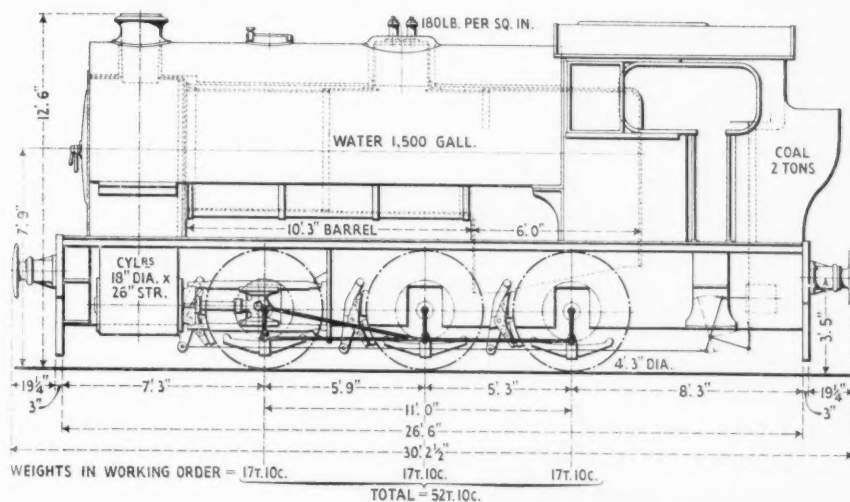


Diagram showing principal weights and dimensions of the locomotive

**B.S.A. TOOLS GROUP.**—Mr. T. E. Parkinson has been appointed Manager of the London headquarters of the B.S.A. Tools Group. Until recently he was Secretary of the Council of Ironfoundry Associations, which post he has resigned to take up his new position. Mr. R. N. Foyer has been appointed Continental Representative for B.S.A. Tools Limited and the Index Automatic Machine Co. Ltd. He was until recently Sales Manager of Deloro Stellite Limited.

**INSTITUTE OF TRANSPORT CONTINENTAL VISIT, 1950.**—The Institute of Transport announces that it has suspended its plans for a tour in Switzerland in 1950, and that it has substituted the following itinerary covering the period Monday, June 12, to Friday, June 23, 1950: London, via Basle and St. Gotthard, to

Milan; thence by motor coach, via Verona, to Merano in the Dolomites; thereafter, on to Innsbruck and Basle, from which the return journey to London will be made. The programme will include excursions, sightseeing tours, and visits to transport depots and works. Further particulars will be circulated, as soon as possible.

**F.B.I. "INDUSTRY AND THE UNIVERSITIES" CONFERENCE.**—The first conference of leading representatives of industry and of the British Universities was convened by the Federation of British Industries, through its education and industrial research committees, on November 25-28, at Ashorne Hill, Leamington, by courtesy of the British Iron & Steel Corporation. The subjects discussed included industry's requirements of scientists and technolo-

gists, their education and training, and the extent to which industry can employ arts graduates; the serious shortage of science teachers for schools, and the possible threat to the supply of science students to the universities; education for management in the universities; vacation and post-graduate courses for recruits to industry; and the development of closer contacts between industry and the universities. The strengthening of university appointment boards was urged and industry was asked to supply fuller information on careers in individual industries.

**GREAT WESTERN OF BRAZIL RAILWAY.**—The directors have agreed to extending the period for ratification of the agreement for the sale of assets signed in London on May 26, from November 23, 1949, to May 20, 1950.

## Track Stabilisation at Waddesdon, Eastern Region

*Sand piling adopted as part of the treatment of soft clay formation in a shallow cutting*

THE Civil Engineer's Department of the Eastern Region has tried out an unusual method for the stabilisation of soft clay track formation. Between the 42½ and 43 mileposts on the former Metropolitan & Great Central line, north of Aylesbury, there is a shallow cutting of maximum depth 15 ft. near the site of the former Waddesdon Manor Station. The track at this location extending over 350 yd. showed the usual signs associated with a soft clay formation. Heaving of the cesses and six-foot way and jumping of sleepers had necessitated a speed restriction of 50 m.p.h.

Shear strength tests of the clay revealed oversteering under live load at depths up to 6 ft. below the sleepers. A thin layer of soft oolitic limestone was found almost throughout the length, varying in thickness up to 9 in. and in depth from 3 ft. to 6 ft. below the sleepers. Below this rock the Kimmeridge clay was unweathered and firm.

Bulk excavation of the soft clay down to rock level and replacement by sand was contemplated but considered too costly. It was decided to try different densities of sand piling combined with limited bulk excavation and sand blanketing.

### Method of Work

The operation of sand piling consists of driving a 9 in. dia. steel spud into the formation between and at the ends of the sleepers, withdrawing on reaching a specified depth and finally filling the hole with sand.

At Waddesdon the spud has been driven to a depth of 5 ft. or to the rock layer whichever is the less. The sand was placed in the holes from bags and consolidated by punners every eighteen inches. Different patterns of piling, as shown on the accompanying diagram, have been tried out. The densest pattern, that lettered (a), has seven piles per sleeper. A pattern of four piles every other sleeper (b) was found to be unsatisfactory and was replaced by four piles at every sleeper (c).

Half the length has been treated by sand piling only, the track remaining in position. The other half has been excavated to 2 ft. 6 in. below rail level and backfilled with a layer of sand 1 ft. thick followed by new slag ballast. Sand piling was carried out during a later possession with the track in position. The track was afterwards lifted to a total of 6 in. above its original level. The new formation and sand layer have a crossfall of 1 ft. from cess to cess.

### Plant Assembled

By Saturday, October 8, plant was assembled at the site and on a temporary siding from a trailing turnout at the 42½ milepost in the up line. A wide space on the up side greatly facilitated the marshalling of the plant and bringing it into action. It also served to take the spoil from the excavation, so avoiding loading into railway wagons.

Possessions of both lines were arranged for four Sundays for twenty hours each, commencing at 10 p.m. on Saturday night, the contractors working two shifts. Main-line trains were diverted via Princes Risborough. On the first two Sundays, October 9 and 16, the track for the portion to be excavated was removed by 10-ton steam crane and stacked on wagons. The contractors then carried out the excavation,

using two 19 R.B. drag-line excavators and two D.4 bulldozers. Later, sand, which had been unloaded during the previous fortnight from lorries on to the down side slope of the cutting, was bulldozed by a third D.4 bulldozer into position and spread to profile. A D.7 bulldozer was used on the up side to spread the spoil, to assist in spreading sand, and to spread a 6-in. layer of ballast to take the track. The ballast had been unloaded from wagons on the up cess, at a distance of 7 ft. clear from the cess rail, during the previous fortnight.

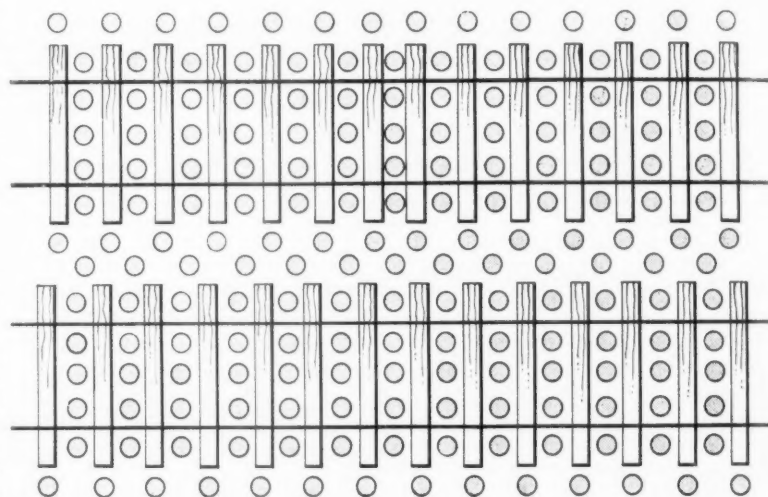
At the same time, as soon as possession was obtained, piling operations began on

the portion of the length to be treated by piling only. One 3-ton and three 5-ton steam cranes were rigged with fixed leaders and No. 5 McKiernan-Terry steam hammers, attached to each of which was the 9 in. dia. steel tubular spud 8 ft. long. The cranes were brought out from the temporary siding on to the up line and were spaced 50 ft. apart. Rates of over 30 piles an hour have been attained.

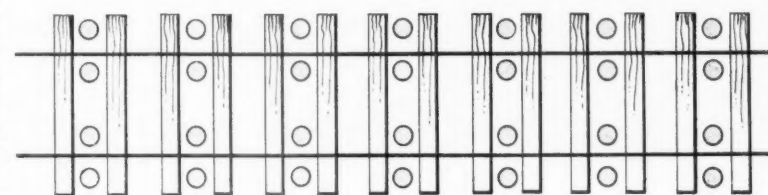
### Heaving of Track

The track, as was expected, heaved as the piles were driven, the average heave being 2 in. The rock layer was encountered at depths varying from 3 ft. to 5 ft. and was missing altogether in places. These lenses of limestone are a feature of the geology of the district.

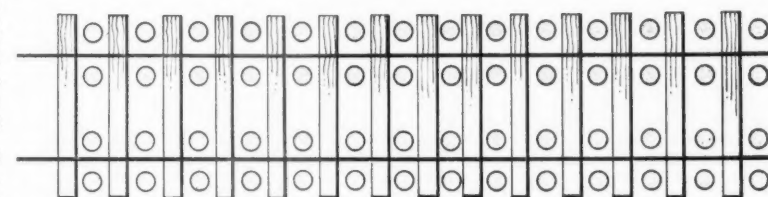
The drainage is being renewed in the ordinary way during weekdays, precast concrete channel drains being used. The



(a) 7 PILES PER SLEEPER



(b) 4 PILES EVERY OTHER SLEEPER



(c) 4 PILES PER SLEEPER

Diagram showing different patterns of sand piling tried; that lettered (c) was finally adopted

line falls at 1 in 200 from the London direction at this place. At the lower end of the length there is a culvert conveniently sited into which the drains are being led.

The work is being carried out by W. & C. French Limited, contractors, of Buckhurst Hill, Essex, under the supervision of Mr. J. I. Campbell, Civil Engineer, Eastern Region, British Railways.



General view of site, showing track removed and stacked, and dumps of sand awaiting spreading

## Goods Shed at Pantin, France

*A simple and economic form of vault construction*



**A** LARGE goods shed of unusual construction built for the French National Railways at Pantin-Bobigny, is described in our contemporary *Travaux* for June, 1949, by M. Cayla, Consulting Engineer to the contractors, Entreprise Coignet.

The rectangular building is of substantial dimensions, and has a length of 355.5 yd., a width of 118 yd., and the clear height is 18 ft. For the intermediate support of the roof, only two longitudinal rows of stanchions were admitted, with the stanchions spaced alternately 14.75 and 8.85 metres apart. The widths of the three aisles thus formed are 32.45, 36.65, and 38.9 metres respectively.

The façades and gables are composed mainly of prefabricated standard parts. As to the roof, the predetermined layout of the stanchions and the need for good lighting conditions, caused the contractors

to adopt the classic solution of a light vault of reinforced concrete. The vault is relieved by tie rods and surmounted by ribs which absorb the wind stresses in such a manner that the concrete of the roof is always subjected to compressive stresses, and, therefore, used in the most economic way.

The transfer of the stresses to the stanchions is ensured by the vault themselves, in a zone where the latter are sufficiently plane to be regarded as inclined girders of high inertia. The ties, which are subjected to more or less constant tensile stresses, consist of groups of round irons of small diameter, tensioned *in situ* and only afterwards embedded in a protective coat of concrete which is thus not subject to tensile stresses. Water proofing is facilitated by the compression of the vibrated concrete of the shell roof. The influence of temperature fluctuations is

minimised, particularly as the ribs are cut at the key so as to act as three-point systems.

The method adopted to obtain good lighting conditions is unorthodox. It consists in providing transverse lanterns suspended from the vault. Contrary to the effect of a longitudinal lantern, a transverse lantern, sectionalising the vault in the longitudinal direction, does not lessen the vaulting effect. The lanterns consist of V-shaped surfaces intersecting the vault at regular intervals of 11.8 metres (corresponding to the average spacing of the stanchions). The surfaces consist of entirely glazed frames of light timber and concrete, resting on a light concrete channel which forms the base of the V.

As already mentioned, the lowest zones of the vaults adjoining the springings must fulfil the function of longitudinal girders between the stanchions; therefore, the V of the lanterns does not extend right down to the springings of the vault, but leaves vault zones of 4 metres width intact on either flank. Here, the parabolic roof shell, otherwise 7 cm. thick, is reinforced.

Transverse expansion joints are arranged in the middle of every fourth "short" span of 8.85 metres, *i.e.*, every 47.20 metres, so that longitudinal expansion or retraction is possible without duplicating any stanchions.

The roof of each aisle is cast with the help of a combined scaffolding and centring of tubular steel, so constructed that the tie rods can be by-passed as the scaffolding is moved on. The centring is removed simply by applying the tensile stress to the tie rods, so that the resulting compression of the vault causes the latter to rise a few millimetres above the centring. Two other scaffoldings are used to cast the concrete of the lanterns and tie rods, respectively.

**THE SCHNADT IMPACT TEST.**—Monsieur Henri M. Schnadt, a Belgian engineer who has introduced a new system of impact testing, has accepted an invitation to visit this country to address a meeting of the Institute of Welding on November 30, at the Institution of Civil Engineers, Great George Street, London, S.W.1, at 6 p.m.



# Track Stabilisation at Waddesdon, Eastern Region

(See article on page 704)



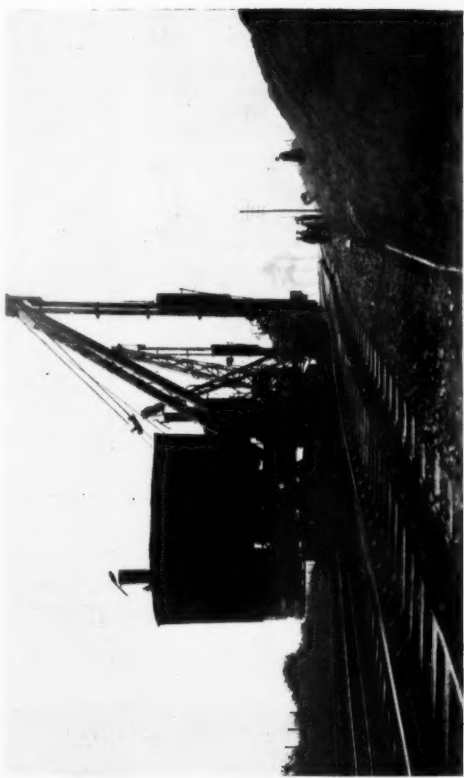
*Excavating about 2 ft. of top soil, after removal of track and old roadbed*



*Levelling sand on levelled site*



*Track replaced and sand pile drivers at work*



*Heaving of track as a result of sand piling*

## The Southern Province Railway, Tanganyika

*Opening of new line to provide an outlet to the Indian Ocean for oilseed area*

AS recorded briefly in our issue of December 9, the 82-mile Southern Province Railway from Mkwaya to Nachingwea in Tanganyika was opened on October 25. Mr. J. R. Farquharson, Deputy General Manager & Chief Engineer, East African Railways & Harbours, made an interesting speech at the opening ceremony, in which he outlined the history of the project.

He said that just over 30 months ago the British Government decided to undertake large-scale production of oilseeds in the Southern Province. After a preliminary examination of the transport problems involved in the scheme, the Tanganyika Railways undertook responsibility, as agents for the Ministry of Food, for the construction and operation of the necessary railway.

During 1948 it was agreed that the newly-formed East African Railways &

September, and work began in October. The principal contractors for the work were Mr. S. Karageorgelis; Modern Constructions (Tanganyika) Limited; and the Tanganyika Engineering & Contracting Co. Ltd. For some time it was just possible for the limited survey staff to keep ahead of the contractors. The work at that stage was all done by hand.

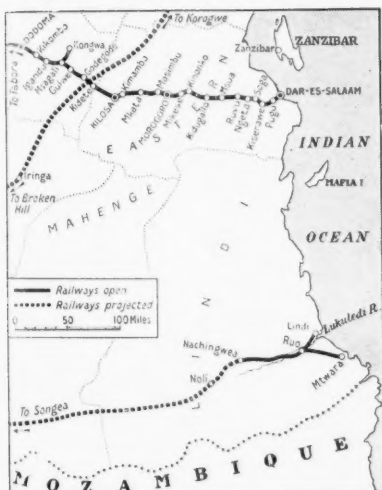
Labour came forward in reasonable numbers until the satisfactory harvest of 1948. The desire of the workers to go home and sell their surplus food and the demands of other projects caused the numbers on railway works to decline and the pace of the work slowed down greatly in the second half of 1948.

the mud flats at Mkwaya at the head of Lindi Creek. Over the quay, which was completed in 1948, all railway construction material has been handled.

Most of the wagons used for the construction were obtained from the disposal authorities from Suez and Basra; they were transferred to Mkwaya after overhaul at Dar-es-Salaam. The engines used for construction, and to be used for traffic for the next few years, have been transferred from the Tanganyika Central Line. The new wagons for the railway were ordered from the United Kingdom in 1947.

### Use of Wooden Sleepers

Almost all railways so far built in East Africa are laid on steel sleepers, but the shortage of steel prevented their use on the new line, which has been laid with Rhodesian sleepers bought from the disposal authorities, mangrove sleepers from



*Part of Tanganyika, showing completed section and proposed extension of Southern Province Railway parallel to Mozambique frontier*

Harbours, with guarantees from the Overseas Food Corporation, should own and operate the line.

As soon as it was possible to enter the area after the 1946-47 rains the survey work was begun. The Makonde plateau prevented any direct line between Nachingwea (the centre for the first development area) and the port works on Mto Mtwara and there was no alternative but to follow the Lukuledi Valley eastwards and cross to Mikindani and Mtwara as soon as the spurs of the plateau permitted. Early investigations showed the heavy work southwards from the Lukuledi.

When this was evident it was decided to lay an access line from Mkwaya at the head of Lindi Creek to Ruu to facilitate the construction of the valley section and provide as early as possible a transport route of considerable capacity from the coast to the cultivation areas.

The limited departmental staff who could be made available were concentrated on the valley route. Some sections were surveyed and located by August, 1947, earthworks contracts were let by



*Left to right: Mr. J. R. Farquharson, Deputy General Manager & Chief Engineer, East African Railways & Harbours; Sir Edward Twining, Governor of Tanganyika; Sir Reginald Robins, Commissioner for Transport, East Africa High Commission; and Mr. A. Dalton, General Manager, E.A.R. & H.*

By the efforts of all concerned with labour and the effect of the exhaustion of surplus food stocks the labour situation improved from early 1949 and has since been reasonably well maintained.

Because of the decline in the earthworks output by hand, arrangements were made with the Corporation for one of its own contractors (John Mowlem & Co. Ltd.) to construct some sections by mechanical means. The earthworks from Mkwaya to Nachingwea total about 46,000,000 cu. ft., of which about 37,000,000 cu. ft. have been moved by hand and the rest by machines. A contract was let to Taylor Woodrow Limited for culverts on the inland part of the section.

At the same time as a start was made with the earthworks for the railway, work began on a lighter quay 200 ft. long on

the coast swamps, hardwood sleepers from the Central Line, and a few from the Southern Province. All are untreated, as time did not permit treating plant to be obtained; they will probably have a relatively short life.

The rails and fittings were obtained from the United Kingdom—almost the only demand made for scarce goods. All the bridges have been made available from the Singida branch (lifted in 1947) and from stocks. Apart from the rails and rail fittings the line has been built with materials available in East Africa. The track laying has been carried out by Mr. Karageorgelis.

Mr. Farquharson referred briefly to statements made about the completion date for this section. During early discussions the managing agents pressed for a firm date so that their plans could be



*The inaugural train on the Southern Province Railway, Tanganyika*

laid accordingly. It was pointed out that reasonably reliable estimates could not be given until information regarding the quantities of earthworks could be obtained from the surveys. Late in 1947 it was asked specifically if he could give an assurance that the line would be completed by the end of 1948. He said that he could not do so, but the Administration would do what it could and the provisional estimate, on the limited information then available, was the end of April, 1949.

The work could just about have been

completed by the latter date but for the steep fall in labour strength from mid-1948. When this occurred the situation was reviewed at a meeting with General Harrison, the Resident Member of the Overseas Food Corporation, and it was agreed to re-cast the plans to ensure that railhead reached Nachingwea by September 30, 1949. In fact, the railway was eight days behind this schedule. Now its capacity will be limited until new rolling stock is received from Britain.

Mr. Farquharson concluded: "Today sees the opening of the first major instal-

ment of the transport facilities now being brought to this area. I trust that these will prove of the greatest assistance in raising the standards of life in the hitherto neglected Southern Province."

Besides the oilseed area, the new line will serve a large hardwood forest area, north of the Lukuledi Valley, of which a 30,000-acre reserve is to be developed by a new company. A mill is to be built at a spot about 18 miles from the railway, with which it will be connected by a road. An output of 7,500 tons of timber a year is planned.

**WESTERN REGION AMBULANCE SERVICE.**—The annual presentation of first-aid awards for the Western Region, Worcester Division, was made recently at the Guildhall, Worcester. Mr. L. G. Morris, Divisional Locomotive Superintendent, presided and was supported by Mr. R. Burgoyne, Regional Staff Officer, and Mrs. Burgoyne; Mr. C. H. Adey, District Goods Manager; Alderman W. R. Amphlett; Messrs. A. V. R. Brown, Divisional Superintendent, Birmingham; J. A. Warren-King, District Goods Manager, Birmingham; P. Anstey, Regional Ambulance Secretary; J. A. Martin, Assistant Regional Ambulance Secretary; Dr. Hiron De, and Dr. W. K. Earle, as well as a large number of other local officials. The class awards were presented by Mr. Burgoyne, and the long-service awards by Mrs. Burgoyne. Mr. Burgoyne said the latest figures indicated that the total number of persons qualified in first aid in the Region were still not much more than 5 per cent. of the total staff, compared with the figure of 10 per cent. which had been

reached before the war. He appealed to stationmasters, supervisors and others who came into contact with the staff, to impress on everyone, particularly the younger men, the value of first-aid training.

**PRAGUE-MOSCOW EXPRESS.**—It is reported from Prague that a new Czechoslovak railway timetable provides for an express from Prague to Moscow covering the journey in just over two days.

**WORLD POWER CONFERENCE.**—The provisional programme of the Fourth World Power Conference, to be held in London on July 10-15 next under the chairmanship of Sir Harold Hartley, includes receptions by H.M. Government and by the City of London, and an official banquet, besides the technical sessions. A number of study tours have been arranged after the conference to installations of technical interest, such as petroleum refineries, steel works, gasworks, open-cast coal workings, and hydro-electric works, in England, Wales, and Scotland, including visits to the Glen Affric and

other electric plants in the Highlands. Full particulars may be obtained from: The Conference Offices, Fourth World Power Conference, 414, Cecil Chambers, 76/86, Strand, London, W.C.2.

**RAILWAY AMATEUR BOXING CHAMPIONSHIPS.**—The 1949-50 finals of the Railway Executive amateur boxing championships, which will take place on March 15, 1950, will be held at the Royal Albert Hall, London. The finals of the first championships to be organised by the R.E.A.B.A. were held in the Spring of this year, at the Seymour Hall, and the accommodation was sold out some weeks before the event. Entries for the championships, which last year attracted 346 entries, close on December 31, and immediately afterwards eliminating contests will be held in the six Regions of British Railways, followed by the quarter-finals at the Railway Institute, York, on March 1, 1950. The championship is open to all grades in the British Railways service in any part of the country.



## Standardisation of British Railways Locomotive Cabs and Controls

*Greater comfort and better control for drivers and firemen on the new standard locomotives*

A FULL-SIZE mock-up has been constructed of the new standard steam locomotive cab to be built for British Railways in 1951. This shows all relevant controls and fittings as they will then be handled by the driver and fireman. At the invitation of the Railway Executive, locomotive inspectors, trade union representatives, and engine drivers of British Railways will visit London headquarters, where the mock-up is housed, and will be able to see for themselves how the safety and welfare of drivers and firemen will be studied in the first British Railways standard locomotives.

### Drawing on Regional Experience

The design is completely new, and embodies what the Railway Executive considers to be the best practice from each of the Regions, as well as new ideas. The arrangement of fittings in the cab is intended to be representative of what will be provided in all twelve standard locomotive types eventually to be built and to which reference was made in our January 7 issue.

The objective of the design is to provide a locomotive cab in which the driver is protected from the weather and has all the controls so placed that he is able to operate them without leaving his seat and without taking his eyes off the track ahead. The fittings under the control of the fireman are conveniently grouped on his side of the cab, and special provision has been made for locker accommodation, including a stainless-steel lined cupboard for food with double-doors to exclude dirt; a special feature is that the movable flap between engine and tender is eliminated, giving a firm level floor for the fireman to work on.

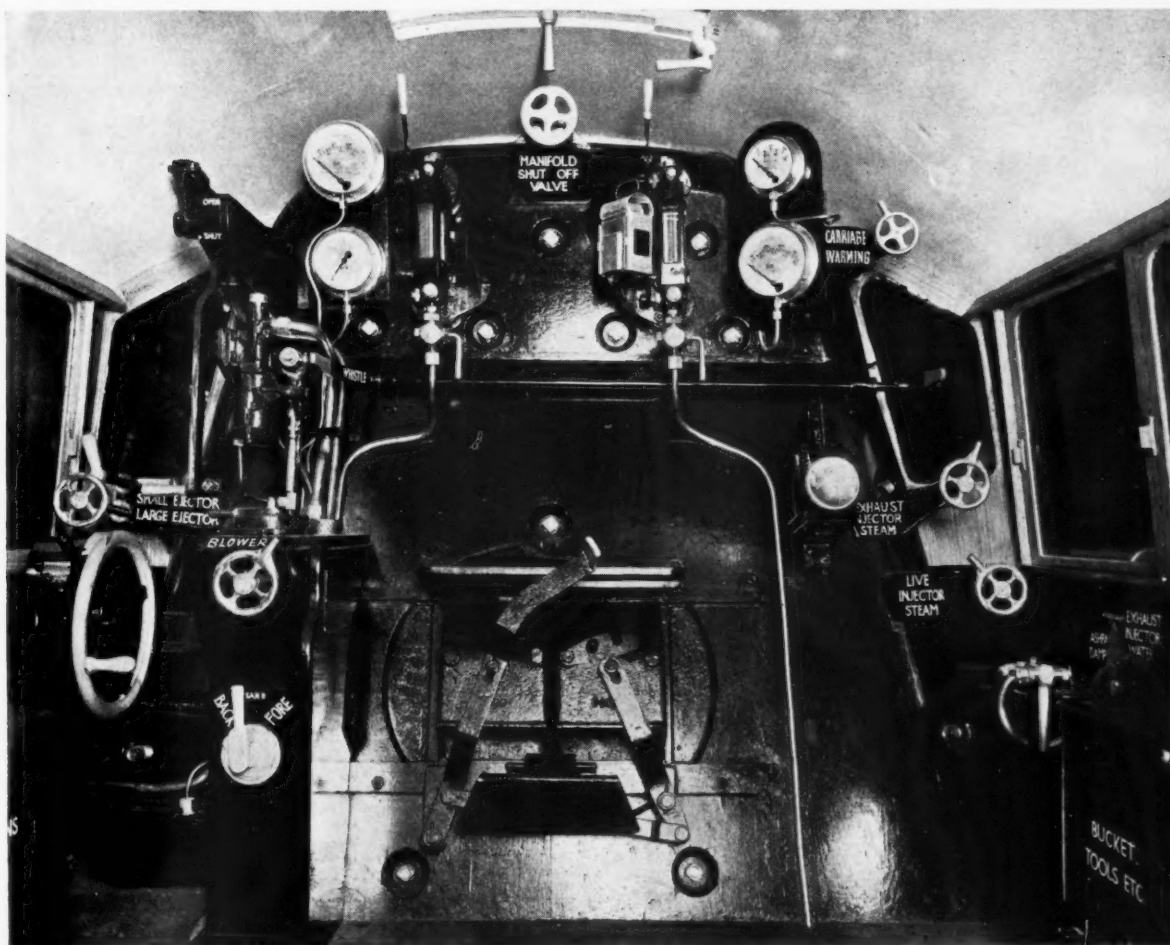
The layout is a definite departure from existing designs. An outstanding feature is the exceptionally roomy cab; the floor is made to extend right back to the tender by extending the footplate rearwards, an arrangement which should be appreciated by the driver and fireman. The majority of the steam pipes and valves are outside the cab, which feature should contribute to keeping the cab cool, free from leaks,

and also improve accessibility considerably, which is a very desirable feature from the point of view of periodical examination.

The cab is secured to the boiler instead of the main frame, which should eliminate relative movement, and enable the floor boards and cab front to fit snugly up to the boiler. The injectors are secured to the firebox in accessible positions, and the steam and delivery pipes are carried on the firebox and boiler, a feature which should eliminate undue vibration, which can contribute so much to leaky joints and unnecessarily increased maintenance costs; the controls to both injectors are on the fireman's side, the overflows being easily visible; the blower valve has been placed in such a position as to be instantly operative by either driver or fireman. The large front windows have been set at an angle to avoid glare, and are movable, so that they can be easily cleaned from inside the cab.

### Eliminating Dust and Draught

The rocking grate controls are sunk below floor level and covered by plates flush with the cab floor, eliminating dust and draught; the control for the self-emptying ashpan doors is at ground level; the damper doors are provided at the front only and are operated by a single wheel. A large sliding door in the

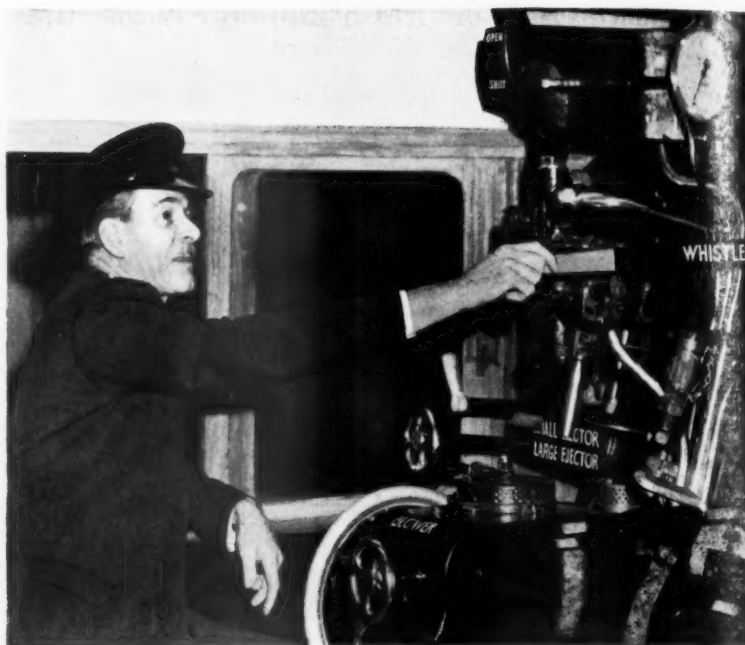


View of footplate looking forward, showing distribution of controls

cab roof and side windows can be opened to assist in keeping the cab well ventilated and cool.

The tender front embodies several interesting features, the rear windows giving a clear view to the rear of the track, and large folding doors gives access to the coal space. Vertical handles have been provided for water pick-up operating gear.

The mock-up referred to in this article was demonstrated for the first time on December 8 by Mr. R. A. Riddles, Member of the Railway Executive, and Mr. E. S. Cox, Executive Officer for Design.



*Mr. R. A. Riddles, Member of the Railway Executive, at the driving controls, during a demonstration of the new locomotive cab*

### Bridge Reconstruction in Italy



*The rebuilding of the lattice girder bridge over the River Po at Borgoforte, on the Verona-Modena line of the Italian State Railways (see paragraph in our September 9 issue)*

## RAILWAY NEWS SECTION

## PERSONAL

Mr. F. W. Hawksworth, Chief Mechanical Engineer, Western Region, British Railways, is retiring on December 31.

Mr. W. S. Goosman has been appointed Minister of Works, Housing, State Hydro-Electric Department, Transport & Marine, in the new New Zealand Cabinet.

Mr. Leonard Rose, Commercial Manager of Charles Roberts & Co. Ltd., has been appointed a Special Director of the company.

The late Mr. George Ellson, who was Chief Engineer of the Southern Railway from 1927 to 1944, left £18,674.

We regret to record the death on December 9, at the age of 60, of Mr. F. E. Birch, District Traffic Agent for the Canadian National Railways at Southampton.

Mr. H. E. Osborn has been appointed a Director of City of Oxford Motor Services Limited, in place of Mr. A. G. Pollard, who has resigned. Mr. Osborn has also been elected a Director of Southdown Motor Services Limited, in place of Mr. J. C. Chambers, who has resigned.

We regret to record the death of Mr. George Robertson, M.B.E., who was Stationmaster at Edinburgh (Waverley), L.N.E.R., from 1927 to 1940, and had previously been for nine years Stationmaster at Glasgow (Queen Street).

Mr. T. H. Windibank is relinquishing the appointment of Works Director (South), Crompton Parkinson Limited, but will remain a Director of the company with special assignments. Mr. J. V. Daniel has been appointed Assistant Managing Director (Works) from January 1.

## FAREWELL MESSAGE FROM MR. G. L. DARBYSHIRE

Mr. G. L. Darbyshire, Chief Regional Officer, London Midland Region, British Railways, who is retiring at the end of this year, has contributed the following message to the last issue of *Carry On*, the London Midland Region and Scottish Region staff news magazine, which is being replaced by the *British Railways Magazine* (London Midland Region and Scottish Region Editions):—

This is the last issue of *Carry On*, and, as I retire from the service at the end of this year, it is also the last opportunity I shall have as Chief Regional Officer of the London Midland Region of sending a message to you. I want to thank all of you for the help that has been given to me during the many years I have had the pleasure of being associated with you. In nearly 52 years railway service I have made many friends in all grades in various parts of the country, and to all of them, whether they are still in the service or have preceded me into retirement, I send my good wishes. I shall have in my retirement happy memories of my relations with the staff and with many of their societies, staff associations, sports clubs and institutes, and I hope that all these activities will continue to enjoy in the future the success they deserve and have enjoyed in the past. I know I can assure my successor, Mr. John Elliot, who is coming from the Southern Region, that you will do everything in your power to support him as Chief Regional Officer of the London Midland Region. Goodbye and good luck to you all.

Mr. Oscar G. Meyer, O.B.E., who has been appointed a Commissioner of Railways for the State of Victoria, and will take over his duties in the New Year, is at present Director of Mechanical Engineering in the Rail Standardisation Division of the Commonwealth Department of Transport. He was previously on the staff of the New South Wales Government Railways. Mr. Meyer saw service during the recent war, and became Director, R.A.E., G.H.Q.; he is an Officer of the Military Division of the Order of the British Empire.

Mr. L. Leighton, Engineer-in-Chief of the Mersey Docks & Harbour Board, has retired, and has been succeeded by his principal assistant, Mr. A. B. Porter.

Mr. J. B. Green has been appointed Claims Officer, Department of the Chief Traffic Officer, at the headquarters of the Road Haulage Executive. Mr. Green became Claims Manager of Pickfords Limited in 1927, and after the formation of the Carter Paterson & Pickfords Joint Parcels Services occupied a similar position with that organisation.



Mr. O. G. Meyer

Appointed a Commissioner of Railways,  
State of Victoria

We regret to record the death, following a road accident on December 8, of Mr. R. W. Keetch, District Manager, Notts & Derby District, Midland Division, Road Haulage Executive.

Mr. V. J. Radbone has retired as Chairman & Managing Director of the International General Electric Co. of New York Ltd., London. Mr. K. K. Boynton (European Vice-President of the International General Electric Co. Inc., with headquarters in Paris) has assumed the Chairmanship of the London company, Mr. B. R. Sankey, formerly Sales Director, has become Acting Managing Director, and Mr. A. MacArthur has joined the board.

## BRITISH TRANSPORT COMMISSION

Subsequent to the recent retirement of Mr. A. E. Sewell as Charges Adviser to the Commission, and his appointment as a permanent Member of the Transport Tribunal, the British Transport Commission has made the following appointments, with effect from January 1:—

Mr. H. J. Birkbeck, Assistant (Railway & General) to the Charges Adviser, to be Principal Charges Officer.

Mr. S. R. Vigor, Assistant (Road) to the Charges Adviser, to be Assistant Charges Officer.

LONDON MIDLAND REGION  
STAFF CHANGES

The following staff changes are announced in the London Midland Region, British Railways:—

Mr. R. L. McIlmoyle, Assistant Engineer (Structures), Civil Engineer's Department, Euston, to be Assistant Engineer (New Works), Civil Engineer's Department, Euston.

Mr. D. Frew, Hotels Accountant, Accountant's Office, Watford H.Q., to be Assistant to Accountant, Euston.

Mr. N. Horner, Accountant, Associated Humber Lines, to be Assistant to Accountant, Euston.

Mr. J. H. Conway, Assistant to Works Accountant, to be Works Accountant, Derby.

Mr. F. Egerton, Assistant District Operating Superintendent, Derby, to be District Operating Superintendent, Stoke-on-Trent.

Mr. J. W. Newall, Assistant Divisional Controller (Passenger Services), Divisional Operating Superintendent's Office, Manchester, to be Divisional Controller (Passenger Services), in that office.

Mr. C. Hearnshaw, Assistant to District Operating Superintendent, Rotherham, to be Assistant District Operating Superintendent, Gloucester.



We regret to record the death on December 11, at the age of 67, of Mr. T. J. D. Atkinson, O.B.E., K.C., who retired because of ill-health from the office of Registrar of the Railway Rates Tribunal in 1944. He had been the first holder of that position, which he had occupied since January 1, 1922. Mr. Atkinson was educated at Trinity College, Dublin, where he was Medallist in Legal Science, was called to the Irish Bar in 1904, and took silk in 1924. In the 1914-18 war he was a Captain in the 5th Battalion of the Royal Irish Fusiliers, 10th (Irish) Division, 1914; a Staff Captain, 31st Infantry Brigade, 1915; and was severely wounded at Suvla Bay, Gallipoli, in August, 1915. In 1917-19 he was Staff Captain, General Headquarters (Ireland). Further reference to his work at the Railway Rates Tribunal (which under the Transport Act, 1947, has been re-named the Transport Tribunal) is made in an editorial note elsewhere in this issue. Mr. Atkinson was the author, jointly with Mr. L. R. Lipsett, of "The Law of Carriage by Railway in Great Britain & Ireland," which was published in 1928. He was made an O.B.E. in 1919.

Mr. H. E. Smith, who since last June has been a member of the staff of the Public Relations & Publicity Office, North Eastern Region, has been appointed North Eastern Regional Editor of the *British Railways Magazine*.

Mr. Frank W. Rowe, Managing Director of K. & L. Steelfounders & Engineers, Limited, has succeeded Mr. F. A.

Martin as Chairman of the British Steel Founders' Association. He has been a member of the executive council of the Association since 1944.



*The late Mr. T. J. D. Atkinson*  
Registrar, Railway Rates Tribunal, 1922-44

#### PRESENTATION TO MR. A. E. SEWELL

A presentation to Mr. A. E. Sewell, formerly Charges Adviser to the British Transport Commission, was made in London on December 9 by a number of his friends and past colleagues to mark the occasion of his retirement, consequent on his recent appointment as a Member of the Transport Tribunal. Mr. Miles Beevor, Chief Secretary & Legal Adviser to the Commission, presided at the gathering, which was attended, among many others, by Mr. J. H. Brebner, Chief Public Relations & Publicity Officer, and Mr. R. H. Wilson, Comptroller, of the Commission; Mr. David Blee, Member of the Railway Executive; Mr. George Cardwell, Chairman, Road Passenger Executive; Mr. A. Henderson, Member, Road Haulage Executive; Mr. A. B. B. Valentine, Member, London Transport Executive; Sir Robert Letch, and Mr. R. Davidson, Members, Docks & Inland Waterways Executive; Mr. G. W. Quick Smith, Secretary & Legal Adviser, and Mr. H. W. Elliott, Chief Traffic Officer, Road Haulage Executive; Mr. R. Bell, formerly Assistant General Manager, L.N.E.R.; Mr. O. H. Corble, Chief Officer (Marine), and Mr. J. R. Pike, Chief Officer (Goods), Railway Executive; Mr. H. H. Halliday, Regional Staff Officer, Eastern Region; Mr. A. E. Hammett, Commercial Superintendent, L.M. Region; and Mr. H. J. Birkbeck, who from January 1 has been appointed Principal Charges Officer to the British Transport Commission.



*A group taken at the recent presentation to Mr. A. E. Sewell (see paragraph above). Left to right: Messrs. G. Cardwell, R. Davidson, A. E. Hammett, Miles Beevor, A. Henderson, R. Bell, A. E. Sewell, D. Blee, R. H. Wilson, J. R. Pike, H. J. Birkbeck, A. B. B. Valentine*

## Ministry of Transport Accident Report

Near Merstham Quarry Tunnel, Southern  
Region, British Railways: June 27, 1949

Brigadier C. A. Langley, assisted by Lieut.-Colonel D. McMullen, inquired into the accident which occurred at 2.55 p.m. on June 27, 1949, in the deep cutting at the south end of Merstham Quarry tunnel, between Coulsdon and Earlswood, on the London-Brighton main line, when the 2.25 p.m. 10-coach electric passenger train, Victoria to Littlehampton, travelling at about 55 m.p.h., became derailed.

It was a very hot day and the track had distorted under the train. None of the 150 passengers was injured, but three subsequently complained of shock. They were detained quickly and proceeded by local trains from Merstham Station,  $\frac{1}{4}$  mile away, on the Coulsdon-Redhill line. The signalman there observed the derailment, and at once advised Earlswood, and the 2.25 p.m. fast electric train, Brighton to Victoria, was stopped there. Current was cut off the down line by the opening of the circuit breakers and at 2.59 p.m. on the up line, in response to a message. Main line services were diverted and there was comparatively little delay to traffic.

The down line was badly distorted at the point of derailment and destroyed for 120 yd. Sleepers were damaged for a further 440 yd. Relaying with 113-lb. f.b. rail was carried out during the night and both lines re-opened at 7 a.m. the following morning.

The accompanying drawings give all the details essential to an understanding of the accident.

### THE TRACK

The down line in the cutting was relaid with new 95-lb. rails on timber sleepers in May, 1941, 60 ft. long, except for two pairs of closures at the tunnel mouth. Brigadier Langley examined it at about 5.30 p.m. on the day of the accident, when it was still very warm. The first mark of derailment was clearly seen on the low rail some 40 yd. from the tunnel; the second was 11 ft. further ahead and it was clear that the first bogie to be derailed left the track at this point where the rails distorted 20 in. towards the cess. Distortion increased thereafter and the rails took up an S curve.

There was a shortage of ballast from Peters Bridge to the point of derailment. (Clearance under this is only 13 ft. 7 in. and the track cannot be lifted there. Rockshaw Road Bridge is at a high level.) There was no ballast on the sleeper shoulders on the cess side, boxing was not up to standard, and on the 6 ft. side there was also a deficiency, particularly near the bridge, where there was no ballast between the ends of the sleepers. The 6 ft. space under the bridge had been opened and filled with rubble covered with timber boards, in an attempt to overcome drainage difficulties caused by clay oozing up in wet weather.

Three or four weeks before the ballast under the bridge and for two lengths south of it had been riddled, lowering the height of the boxing, loosening it and reducing lateral resistance. Joints were being lifted just before the train approached. (The places where the sleepers had been opened out and not refilled are shown in the drawings.)

Cant, gauge, and alignment in the tunnel were well maintained. There was some side cut on the high rail but it was

not excessive. Fastenings were holding well and sleepers sound, but some under Peters Bridge had been "pumping."

There were no signs of creep though many rails were butting or showing very small expansion gaps, measured later and recorded (see drawings). It can be concluded that most, if not all, joints in the cutting were tight during the extreme afternoon heat and many rails under compressive stress.

Brigadier Langley had some fishplates removed. He was informed that they had been greased in April but found few signs of that, on plates or rails. There were indications of binding which might have restricted movement. He formed the impression that the work had not been well done and that the grease had dried quickly.

### WEATHER CONDITIONS

The weather during June had been warm and dry and on the day of the accident maximum shade temperature at Croydon, 7 miles away, was 87° F. and maximum solar radiation temperature at Greenwich 142° F. The report gives particulars covering the previous 10 days at these places, the nearest where they were being recorded.

On July 1 tests were made in the cutting. Sun temperature rose to 124° F. at 1.15 p.m. compared with maximum solar radiation at Greenwich of 138° F. and maximum shade temperature at Croydon of 79° F., and it can be assumed that maximum sun temperatures in the cutting ranged from 110° F. on June 19 to 135° F. on June 27, when rise in rail temperature from the minimum during the previous night was probably about 75° F.

### HEAT PRECAUTIONS

In February, 1949, instructions were issued to Divisional Engineers that in future expansion gap allowances for 60 ft. rails should be as follows:—

Rail temperature	General description	Gap
Below 50° F.	Frosty or cold	$\frac{1}{2}$ in.
50° F.-75° F.	Cold to warm	$\frac{3}{4}$ in.
75° F.-100° F.	Hot	$\frac{1}{2}$ in.
Over 100° F.	Very hot	Nil

In tunnels, normal gaps are allowed for the first four joints at each end, but as the average range of temperature is small, gaps for the remaining joints are reduced to  $\frac{1}{8}$  in., or in cold weather a little more, sufficient to permit the rail being removed and replaced in case of breakage.

The theoretical expansion of a 60 ft. rail is  $\frac{1}{4}$  in. per 25° F., and this produces a compressive stress of approximately 24 tons per sq. in. or 21 tons in a new 95 lb. B.H. rail when fully restrained. Thus, the expansion allowances are sufficient to cover all normal conditions, though it is not practicable to cater for extremes of cold and heat, which may range from 10° F. (22° of frost) to 140° F., producing an expansion of over  $\frac{3}{4}$  in. compared with maximum rail gap of from  $\frac{1}{2}$  in. to  $\frac{3}{4}$  in. Consequently in very hot weather rails may be in compression, e.g., if they were laid with  $\frac{1}{4}$  in. gaps at a temperature of 60° F., and were able to expand freely, not only would joints be closed but in addition a compressive stress of 24 tons per sq. in. would be set up when the temperature rose to 135° F.

**Fishplates:** On February 21, 1949, the Divisional Engineer sent the following letter to all his Permanent Way Inspectors:

"In accordance with Instruction No. 8(d) of the Green Book of Instructions to Engineer's Department staff the work of greasing fishplates should be completed by the 31st March. Will you please therefore put this work in hand, commencing the 28th February, if you have not already commenced.

Each pair of fishplates is to be taken off and the fishplates turned end for end so that the outside plate becomes the inside plate and *vice versa*, but the plates must on no account be turned upside down. When the fishplates are taken off to be turned, care must be taken to see that all rust is removed from the fishing angles of both the fishplates and the rails before the grease is applied, and at the same time the expansion of the joints must be attended to.

As in previous years, the material to be used for greasing of fishplates is cleaned axle oil and petroleum residuum, the proportion for mixing being 30 per cent. oil to 70 per cent. petroleum residuum, approximately two gallons of the mixture being required per single line mile of track.

You have received from the Stores Department the material for carrying out the work and while it is in hand please let me have a report by not later than each Monday morning of the number of pairs of fishplates greased during the week ending the previous Saturday, so that I may be aware of the progress being made, and on completion of the whole of your district please indicate on the last return that the work has been finished."

**General Heat Precautions:** On April 26, 1949, the Divisional Engineer issued the undermentioned instructions, which were a repeat of those issued in 1948:—

"Will you please draw the attention of all your gangers to the possibility of track buckling during the first spell of hot weather after the winter. Although the winter set taken up by the track is eased to some extent during the greasing of fishplates, the track is more likely to buckle under the first heat than it will do when it has adjusted itself to warmer conditions.

The attention of gangers should also be drawn to the fact that track which has been relaid or rebalasted for twelve months or less is much more liable to give trouble than older track.

Buckling should not take place if proper precautions have been taken, i.e., by adjustment of expansions, pulling back of rails, ballast kept to top of sleepers, keys driven tight, etc.

As a rule a ganger should know those sections of his length which are susceptible to buckling, and under the conditions set out above, such stretches of track should be kept under special observations.

Gangers should also be warned that buckling can well be caused by using a jack during the hottest period of the day.

Please draw the attention of all gangers to these points and acknowledge receipt."

### EVIDENCE

The train, the brakes of which were tested before leaving Victoria, travelled without incident, stopping at East Croydon on the way and was coasting at about 55 m.p.h. on emerging from the tunnel.

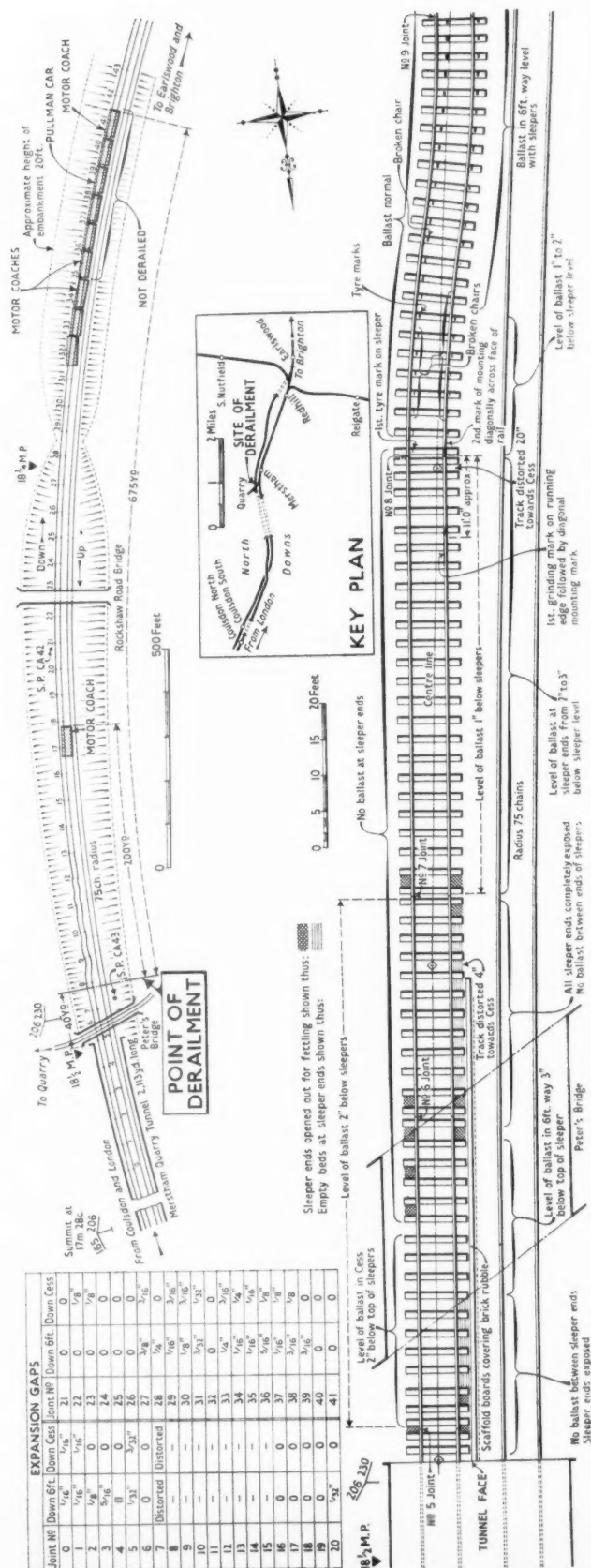
Immediately afterwards the motorman noticed some rough riding and applied the brake; the lurching became severe near signal C.A. 42, but brake pipe pressure fell to zero before a second application could be made. The guard, travelling in the sixth coach, felt a jerk and some swaying after leaving the tunnel, but was not particularly alarmed until he saw a coach swinging about and throwing up a cloud of dust. Other railway servants, including a motorman travelling in the cab to learn the road and others riding in the train, confirmed this, and one of them, on realising that his coach was derailed, pulled the communication cord.

The ganger, in charge of the 2½-mile length from the tunnel to the north end of Redhill Sand Tunnel, said his gang had just finished work as the train approached, and standing south of Peters Bridge, he watched it pass. The line suddenly bulged out towards the cess and there was a bang and a cloud of dust. He telephoned from a signal to Earlswood to have the road blocked and sent men to protect it in each direction. The sub-ganger also saw the track move outwards after six coaches had passed. Both were confident that alignment was correct before the train arrived and that distortion took place under it.

Walking his length early in the morning the ganger found nothing unusual along it and most expansion gaps open to about ½ in. The gang started work on the down line between Rockshaw Road Bridge and signal C.A. 42, opening out sleepers for packing. The ganger gave instructions regarding joints requiring lifting near Peters Bridge and then had to go away. On returning at 1 p.m. he found it very hot in the cutting, with joints very nearly closed, but cool near the tunnel, where ballast had by then been removed from several joints. He decided to complete the work, raising the track by jacks only about 1 in. and spreading granite chippings over the sleeper bed. He packed both high and low rails at several joints, verified the gauge and checked alignment and cant. There had been no creep for many years between the tunnel and the Rockshaw Bridge, and he had never had to pull back rails. There was often trouble in wet weather under Peters Bridge; when clay oozed up sleepers could not be lifted properly. He had cleaned the ballast for several rail lengths some three or four weeks before to remove dirt, consequently the boxing was not up to sleeper level. He realised there was a shortage on the shoulders but had not reported it, nor had he appreciated that lateral strength was seriously weakened by the work he was doing.

He thought the written instructions from his inspector applied mainly to the first onset of hot weather, though he realised he should not use a jack during a hot spell unless absolutely necessary. He was not apprehensive, however, as it was comparatively cool near the tunnel and he was lifting only individual sleepers. He oiled the fishplates in April, and explained the procedure he followed to Brigadier Langley, but admitted to him, when some were removed, that the oiling had not been very well carried out.

The sub-ganger opened out several joints, working towards Peters Bridge, where five required attention, but did not start lifting until the ganger arrived back. It was getting very hot and nearly all joints had closed. He commented on this to the ganger. He knew a jack should have been used only in exceptional circumstances and thought the worst time for buckling was about mid-day. Some





of the plates were taken off when oiling in April, but the majority only loosened, oil being run in with a brush, which the ganger had said would be sufficient. (The ganger himself however explained to Brigadier Langley that those instructions referred only to a second oiling.)

The permanent way inspector considered the track generally satisfactory except for the short length under Peters Bridge, but did not think it of much use keeping large supplies of ballast there. It soon got clogged when wet clay came through. He had instructed the ganger on several occasions to watch this place particularly. Hallade recordings showed the track to be riding well but the length was not one of the best. He had to speak about the weeds. The ganger, however, had been short of a lengthman for six weeks. He had issued written instructions about heat precautions but not asked the ganger if he understood them. He had taken the ganger's word that fishplate oiling had been properly done.

The Divisional Engineer said negotiations were in progress regarding Peters Bridge. It was hoped it would be removed by the end of the year.

#### INSPECTING OFFICER'S CONCLUSIONS

Brigadier Langley accepts the statements that alignment and gauge were correct. The track was, however, unstable and the derailment due to distortion under the train. The deficiency of ballast itself should not have been enough to account for that, but lateral resistance had been weakened by earlier cleaning and reduced by lifting sleepers a few minutes before the derailment, when thrust from the wheels and vibration sufficed to start the rails moving. Buckling then became progressively worse.

Probably the short distance between the trailing motor bogie of the sixth coach and leading one of the seventh prevented the latter from negotiating the distorted track and so it mounted the low rail. Fortunately the track was not burst open nor more vehicles derailed.

Primary responsibility must rest with the ganger. He failed to appreciate the danger of disturbing the track, short of ballast, on a very hot day. It was clear he had not understood the written instructions properly. He is 60 years old with 38 years service, all on the same length, and as ganger for the last four, with a clear record.

The inspector must share some responsibility for failing to ensure that the work was carried out properly and efficiently and the ganger alive to the precautions to be taken in hot weather. He did not follow up the written instructions by personal explanation to the gangers, nor check personally that greasing of the fishplates had been properly carried out. Realising that the track at Peters Bridge was not well supplied with ballast, he took no steps to increase it, and Brigadier Langley is unable to accept his suggestion that it was not worth while. He probably was unduly influenced by the hope that the bridge would soon be removed. A man of 59, with a very good record, he has 41 years service, seven as inspector.

#### REMARKS

When sun temperatures rise as high as 135° F., it is unavoidable that some rails are under stress, but dangerous conditions are not set up on properly maintained and ballasted track, because its lateral strength is ample to resist buckling. If, however, this stress becomes high due to irregular expansion gaps or tight joints,

and at the same time the holding power of ballast is lowered by loosening or lifting, danger may arise, especially in those places where there is a deficiency of ballast. In this class, although maximum temperatures in the cutting probably ranged between 110° F. to 135° F., for ten days before the derailment, buckling did not occur until after the joints were lifted.

Accidents due to heat distortion have risen during the last two years and this aspect of track maintenance is receiving special attention. The whole problem is, unfortunately, still affected by shortage of manpower and difficulty in obtaining and retaining men of the right type, often due to housing problems and competition from other industries. Courses of instruction have been arranged and a standard system of periodical assessment of every permanent way length has been introduced in all Regions. Investigation into the causes of heat distortion has been made during the last 18 months and special instructions regarding heat precautions have been issued but, as already explained, they must be reinforced by verbal explanation and pro-

per supervision if they are to be fully effective.

Research into the strength of different types of ballast was instituted as a result of the Wath Road derailment on May 18, 1948, and the method of oiling fishplates is now being re-examined, with a view to improving the quality of the lubricant. Flat-bottom rails have been standardised and their gradual introduction in place of bull-head rails will increase both the lateral as well as the vertical strength of track. In connection with the research, it might be desirable to measure the actual stresses set up in rails in hot weather, so as to supplement the information previously obtained regarding the maximum buckling forces which have to be resisted; also to investigate whether the smoother sleeper beds produced by modern methods of measured shovel packing have affected lateral resistance markedly. Brigadier Langley hopes that the results of this work will be published, so that engineers may be further informed on a subject which does not seem to have received in the past all the scientific study which its importance merits.

## The "Simplon-Orient" Express Accelerated

The new timetable for the "Simplon-Orient" Express, as fixed by the International Timetable & Through Carriage Conference held at Brighton early in October, and of which a report appeared in *The Railway Gazette* of October 21, is a notable advance on the present timings.

The new timetable as from May 14, 1950, the day of the introduction of the summer timetable in Europe, by advancing the departure of the London connection to the "Simplon-Orient" Express from 2 p.m. to 10.30 a.m. from Victoria, enables travellers from Britain to reach Milan at 8.50 a.m. the next morning, and Rome by 6.40 p.m. on the same day as the arrival in Milan.

The principal gains, however, have been made for the main train, which links Calais with Istanbul via Paris, Milan, Venice, Belgrade, and Sofia, a distance of 2,070 miles. At present the journey is covered by the "Simplon-Orient" Express in 112 hr. 45 min. eastbound and 89 hr. 30 min. westbound. The difference in the journey times eastbound and westbound is due to a halt, eastbound, of 11 hr. 35 min. at Sofia to allow the train to cover part of the route through Bulgaria, Greece (a seven-mile stretch), and Turkey, by day, with arrival at Istanbul at 6.45 a.m. In the reverse direction the departure from Istanbul is at present at 9.30 p.m. for the same reason. The westbound train, in fact, stops at Sofia only 43 min.

By abolishing the long break at Sofia and by providing other savings in stopping and running times the new timetable means a saving of not less than 29 hours eastbound and of about twelve hours westbound. Arrival at Victoria will be postponed to 7.50 p.m. instead of 3.5 p.m. as at present.

Savings in the journey time will, in addition to accelerated running on all the lines concerned, be brought about by considerably shortening the stopping times. The present stops at Milan, 1 hr. 15 min. eastbound, and 60 min. westbound, will be reduced to 30 min. each, and the long stops at Belgrade, 3 hr. 5 min. eastbound, 1 hr. 45 min. westbound, will be considerably shortened. An important gain will be obtained by avoiding Trieste. At present,

the eastbound train stops at Trieste for 2 hr. 10 min., the westbound train for 2 hr. 40 min.

In the new timetable, the "Simplon-Orient," eastbound, will leave the Venice-Trieste line (17 miles west of Trieste), near Monfalcone, the frontier station between Italy and the Trieste Free Territory, which will be its last stop in Italy. From Monfalcone the train will proceed on the main line for Trieste as far as Bivio d'Aurisina in Trieste Territory, 8 miles from Monfalcone, and there join the main line to the Yugoslav frontier.

The connecting link between Aurisina Bivio and Aurisina, where the main line for Yugoslavia is joined, is nearly two miles long, and the distance between Aurisina and Poggioreale Campagna, the frontier station, between the Free Territory and Yugoslavia, is seven miles, and there are four more miles thence to Sezana, the Yugoslav frontier station. By using this route the "Simplon-Orient" Express will cover 21 miles between Monfalcone (Italy) and Sezana (Yugoslavia) instead of 40 miles as at present between the same places. The present route entails the section Monfalcone-Trieste, 17 miles with reversal of the train at Trieste, and the section Trieste-Sezana (22 miles), which means that the train covers twice about 10 miles of the southernmost part of the Monfalcone-Trieste section as far as close to Bivio d'Aurisina. The position may be followed on the map of the Trieste railway system published in *The Railway Gazette* of April 2, 1948.

The gain in time through use of the new route will not only derive from the shorter mileage, but also from easier working conditions resulting from the cutting out of the descent to Trieste from 442 ft. above sea level at Bivio d'Aurisina (the summit of the Monfalcone-Trieste section) to 10 ft. at Trieste, with the further climb from Trieste to near Bivio d'Aurisina. Aurisina proper is at a higher altitude, 548 ft., while the altitude at Poggioreale Campagna and Sezana is 990 ft. and 1,181 ft. respectively. The approach from Monfalcone, however, is a further ascent, as that station is at an altitude of only 75 ft.

To compensate Trieste for the loss of the direct service by the "Simplon-Orient" Express, connections are to be run between Monfalcone and Trieste, as well as between Poggioreale Campagna and Trieste. Through carriage services between Paris and the Near East will be improved. The train will include a first and second class sleeping car and a first and second class composite coach daily between Paris and Belgrade, as compared with four times a week at present. On the other hand, there will be no change in the working of the first and second class sleeping car and first and second class composite between Paris and Istanbul, which will continue to run three times a week in either direction as at present.

As the new timetable for the "Balt-Orient" Express (Stockholm and Oslo to Istanbul) provides a direct connection at Belgrade with the "Simplon-Orient" Express, passengers to and from Istanbul will be able to use the "Balt-Orient" from and to Belgrade on the days when the Paris-Istanbul coaches do not run.

## Staff & Labour Matters

### Joint Consultation Between Management and Staff

In our November 25 issue we commented on the N.U.R. decision to co-operate with the A.S.L.E. & F. and R.C.A. in the working of the machinery of consultation between the management and staff of British Railways. Sir Eustace Missenden, Chairman of the Railway Executive, and the principals of the trade unions concerned, have now explained to the 635,000 railwaymen the arrangements agreed on in a circular letter, which is given below:—

### CONSULTATION BETWEEN MANAGEMENT AND STAFF

Discussions have taken place between the Railway Executive, the National Union of Railwaymen, Railway Clerks' Association, Associated Society of Locomotive Engineers & Firemen, and the unions constituting the Railway Shopmen's National Council, with the object of promoting greater co-operation in the running of British Railways and good relations between the management and the staff in all grades and departments.

As a result it has been agreed to introduce a procedure for consultation between the Railway Executive officers, local officials and supervisors, and the elected representatives of the staff on matters of general departmental or local policy not within the realm of negotiation, and upon which the responsibility for decision rests upon the Railway Executive in accordance with the provisions of the Transport Act.

It is not intended that such consultation shall interfere with the operation of the agreed negotiating machinery nor encroach upon the functions of local departmental committees, sectional councils, and shops, works, and line committees, but it is considered desirable that the representatives of the staff to take part in consultation should be representatives elected to the various bodies within the agreed negotiating machinery.

It has, therefore, been agreed that there shall be consultation at levels corresponding to local departmental committees, sectional councils, shops, works, and line committees and Regional headquarters, with the headquarters of the trade unions. It is recognised that consultation may be instigated by either management or staff at the appropriate

levels and it is intended that periodical meetings shall be held under this procedure to review matters of common interest.

The agreement reached between the Railway Executive and the trade unions in this matter will be set out in detail in a subsequent document indicating that the Railway Executive has undertaken to:—(a) Give prior indication to the staff of contemplated lines of action; (b) arrange for discussion of such proposals with the staff representatives at the appropriate level; (c) give careful consideration to representations of the staff in regard to such proposals; (d) notify the staff of the decision reached by the management, with explanations in any instances where it is not practicable or desirable to give effect to the representations of the staff.

It is appreciated that members of certain grades, by reason of their responsibilities as local officials of the management, cannot be embraced by the procedure for consultation at local levels, but they will be represented in consultation at sectional council level. In addition, however, such local officials will be brought into consultation by their district officers in regard to matters directly affecting their local areas of responsibility and matters in which the working under their control impinges upon the operation of the railway in an area or district.

The Railway Executive and the headquarters of the trade unions have mutually agreed that should any difficulties arise at the appropriate level after this procedure has been followed, these may be referred to them for their assistance in the interests of the smooth working of the scheme.

It is desired that the new procedure shall cover all matters requiring decision by the management as distinct from matters covered by agreement under the negotiating machinery, and, therefore, it is not proposed to issue any restrictive list of subjects to which the procedure shall apply.

The Railway Executive and the trade unions desire the procedure agreed for consultation to be a constructive feature in the efficient operation of British Railways, and urge all members of the staff to enter into the scheme with full appreciation of the opportunities it affords them through their elected representatives to assist the Railway Executive to fulfil the requirements of the Transport Act by making railway transport unrivalled for speed, efficiency, economy, and safety.

EUSTACE MISSENDEN, Chairman, Railway Executive

W. T. POTTER, President, N.U.R.

J. B. FIGGINS, General Secretary, N.U.R.

PERCY MORRIS, President, R.C.A.

G. B. THORNEYCROFT, General Secretary, R.C.A.

F. KELLAND, President, A.S.L.E. & F.

J. G. BATY, General Secretary, A.S.L.E. & F.

GAVIN MARTIN, General Secretary, Confederation of Shipbuilding & Engineering Unions

**RAILWAY BENEVOLENT INSTITUTION NEW YEAR'S DAY COLLECTION.**—The usual New Year's Day collection in aid of the Railway Benevolent Institution will be made on Monday, January 2, 1950, at all railway stations in Great Britain and Ireland. The number of employees who became members of this year's casualty fund was 205,815, and assistance has been rendered to 75 widows of men killed, 536 widows of men dying from illness and 3,403 men accidentally injured, making a total of 4,014 cases relieved, or one in every 51 contributors.

## Questions in Parliament

### Railway Fares of Schoolchildren

Mr. B. Janner (Leicester West—Lab.) on November 28 asked the Minister of Education whether he would arrange with the Transport Commission to grant reduced fares on the railways to all schoolchildren.

Mr. D. R. Hardman (Parliamentary Secretary, Ministry of Education): The Minister of Education is concerned with travel to and from school, and his information is that half-fare concessions are already available on the railways to children of statutory school age.

Mr. Janner: Will the Parliamentary Secretary consider making reductions in the fares of all schoolchildren, apart from the question of their attendance at school, in view of the fact that the school leaving age has been raised by a year?

Mr. Hardman: That is a question which can be considered by the Minister of Transport.

Mr. G. Wadsworth (Buckrose—Lib.): Is the Parliamentary Secretary aware that I put this question two years ago, and am still waiting for an answer?

Mr. Hardman did not reply.

### Effects of Rates Increases

Sir Ian Fraser (Lonsdale—C.), on December 6 asked the Chancellor of the Exchequer what estimate he had made of the effect on the cost of living of an increase of 16½ per cent. in railway and canal freight charges.

Sir Stafford Cripps (Chancellor of the Exchequer): No useful estimate can be made of the effect of general increases in freight charges on the cost of items in the cost-of-living index until the effect on the retail price of the various individual items can be seen. The general implications of such increases have been taken into consideration by the Government, as the Minister of Transport said in the House on November 28.

Sir Ian Fraser: Did the Chancellor have in mind an increase of this magnitude when he made his broadcast?

Sir Stafford Cripps: This was obviously one of the matters that might influence the trend of prices. I had not this particular one in mind.

### Tanganyika Railway and Port Schemes

Mr. E. H. Keeling (Twickenham—C.), on December 7 asked the Secretary of State for the Colonies what was the expenditure up to date on railways and ports serving the groundnut areas in Tanganyika; and what proportion of that had been or would be paid for by the East African Railways & Harbours Administration.

Mr. D. R. Rees-Williams (Parliamentary Under-Secretary of State for the Colonies): The figure for expenditure to date on the new port and railway in the Southern Province is not available (the estimated cost is £4,650,000). The figure for the general improvements to the Central Line Railway and the port of Dar-es-Salaam is £2½ million. The answer to the second part of the question is that the whole capital cost of these works will ultimately be met by the East African Railways & Harbours Administration.

Mr. Keeling: Is the Under-Secretary aware that, according to *The Times* Nairobi correspondent, the East African Railways & Harbours Administration is hurt by the claim of the Minister of Food, the other day, that among the achievements of the Overseas Food Cor-

poration were the making of these ports and harbours?

Mr. Rees-Williams: I think there is some misunderstanding here. The Overseas Food Corporation is acting as agent of the Administration to supervise construction, and, eventually, it is intended that its expenses shall be refunded to it by the Railways & Harbours; so it is, in fact, expending a considerable amount of money.

Mr. Oliver Stanley (Bristol West—C.): Is it a fact that the Overseas Food Corporation has in return to guarantee a minimum amount of traffic every year, and, if so, can the Under-Secretary tell us the minimum amount?

Mr. Rees-Williams: I am not quite sure whether Mr. Stanley is alluding to the Central Line or the Southern Line. Perhaps he will put the question down.

Mr. Walter Fletcher (Bury—C.): Is the Under-Secretary satisfied that in the Mikidani harbour scheme big capital expenditure is justified before the 20,000-acre pilot scheme behind has shown any results at all?

Mr. Rees-Williams: Mr. Fletcher knows that it is not only the groundnut scheme which will be served by this port, and that it is in fact essential to have a good port in the Southern area in order to develop the whole of that region of Tanganyika.

## Notes and News

**London Transport Executive.**—Applications are invited for the post of control assistant in the shops section of the permanent way (railways) office at Lillie Bridge Depot, Fulham. See Official Notices on page 719.

**Crown Agents for the Colonies.**—A senior traffic superintendent is required by the Gold Coast Government Railway for one tour of 18 to 24 months with prospect of permanency. See Official Notices on page 719.

**Buffer-Stop Collision at Victoria Station.**—The 7.42 a.m. train from Orpington, British Railways, Southern Region, collided with the buffer-stops at Victoria Station, London, on December 8. Of the eight persons injured, one was detained in hospital.

**British Railways (Western Region) London Lecture & Debating Society.**—Mr. H. W. Howard will read a paper on "Claims and their Prevention" before British Railways (Western Region) London Lecture & Debating Society, in the Clerk's Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m., on January 5.

**Southern Region Christmas Travel Arrangements.**—During the Christmas holiday some 300 extra main-line trains will be run on the Southern Region between London and the Kent and South Coasts, Bournemouth, and the West of England; one hundred of these trains will run on Christmas eve. On Christmas Day and Boxing Day a reduced Sunday service of trains will operate, and on Tuesday, December 27, a Sunday service will apply, increased by additional long-distance trains. The Dover-Dunkirk night ferry and Newhaven-Dieppe services to the Continent will not run on Christmas Day. On Christmas Day, Boxing Day and December 27, there will be day excursions from London to eighty coastal resorts and provincial towns, and cheap day ticket facilities from some 200 London suburban

stations to various seaside and country stations. Cheap day excursion tickets from coastal and provincial stations to London, and for cross-country trips, will also be available during the three-day holiday.

**Students Assist with Christmas Mails.**—British, Polish, Nigerian, West African and Jamaican students from various universities are assisting with Christmas parcels and mails on British Railways, London Midland Region. The number of students employed at St. Pancras, Kentish Town, Willesden, Watford, Broad Street goods depots and Euston Station is 220 and there are 120 at the Maiden Lane depot, where nearly half a million bags of Christmas mail are expected.

**Original Permits Concession.**—The Road Haulage Association reports that arrangements have been made to help operators who appear to be ineligible for an original permit because of a change in the ownership of their businesses since November 28, 1946, and that the Road Haulage Executive has informed, the R.H.A. that in appropriate cases, where the Executive is satisfied that the nature of the hardship so warrants, an ordinary permit will be issued on a basis that will put the applicant in the same position as if he had applied for, and had been granted, an original permit.

**Joint Engineering Conference, 1951.**—The Councils of the Institutions of Civil, Mechanical and Electrical Engineers have decided to hold, in London, a joint engineering conference from June 4 to 15, 1951, to coincide with the Festival of Britain. The theme of the conference will be to place on record the achievements of British engineers and it will also underline the interdependence of all branches of engineering. Considering the importance of maintaining the high standard and technical efficiency of British engineers in the future, the conference will also discuss the development of the system of education of engineers in Great Britain.

**"Golden Arrow" in Collision.**—A Southern Region "Battle of Britain" class Pacific locomotive running light, collided with the "Golden Arrow" boat train at Victoria Station, London, on December 9. The light-engine, which was crossing from another line, tilted over

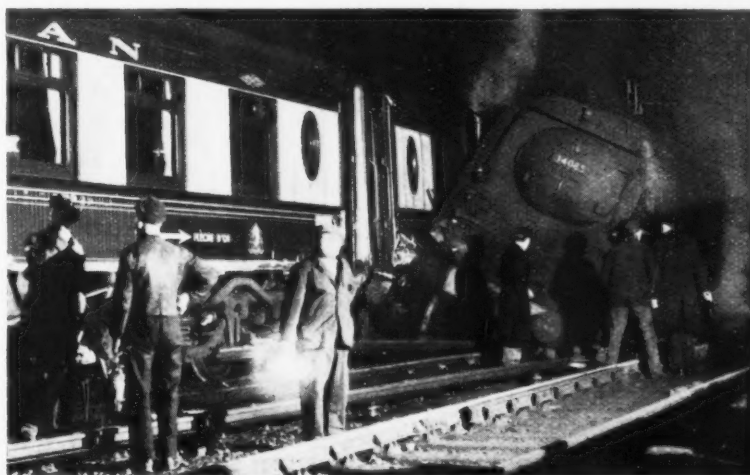
after the collision, and was run into by an electric train leaving Victoria for West Croydon. Eight passengers and three railwaymen were injured, but none was detained in hospital.

**Institute of Transport, Metropolitan Section.**—On January 2, Mr. C. E. R. Sherrington, Secretary, Railway Research Service, will read a paper on "Transport 1900-1950" before the Institute of Transport, Metropolitan Section. The meeting will be held at Livingstone House, Broadway, London, S.W.1, at 5.30 for 6 p.m.

**Christmas Train Services, Eastern Region.**—On December 23 the Eastern Region will run 111 additional trains, as part of the Christmas holiday programme of nearly 400 additional trains between December 21 and 29; many other trains will be duplicated and relief trains are being run to many scheduled services. Restaurant and buffet car services generally will be maintained throughout the period and normal seat-reservation facilities will apply. Local and suburban services will be amended on Christmas Day, Boxing Day and Tuesday, December 27.

**Ian Allan Dinner.**—The annual dinner of Ian Allan Limited, publisher of railway books and periodicals, was held at the Aldwych Brasserie, London, on December 8. The toast of the guests was proposed by Mr. G. A. T. Allan and responded to by Mr. C. F. Klapper, Assistant Editor, *Modern Transport*, and the toast of the trade was proposed by Mr. J. T. Holder and responded to by Mr. A. E. Minshall of Simpkin Marshall Limited, and Mr. E. J. Hollands of W. H. Smith & Son Ltd. Mr. George Dow, Regional Public Relations & Publicity Officer, London Midland Region, British Railways, proposed the toast of the Chairman, Directors, and staff of Ian Allan Limited, and Mr. Ian Allan, Chairman, responded.

**Steel Production Target in Sight.**—November steel production, which was at an annual rate of 16,358,000 tons, exceeded the previous best November—last year—when the rate was 15,760,000 tons. The November production was only slightly below the best month the industry ever had. The high rate of production now being achieved compares favourably



Result of a collision outside Victoria Station, London, between a Pacific locomotive running light and the "Golden Arrow" boat train (see paragraph above)



with the best pre-war or wartime month when the rate was 14,314,000 tons. Production was running at a rate of 15,449,000 tons during the first three quarters of this year. With higher figures for October and November, allowing also for some fall over the holidays, the industry should achieve the upper limit of the target set for the year of 15½ to 15¾ million tons.

**Islamic Economic Conference.**—An agency report from Karachi states that the Transport Committee of the Islamic Economic Conference meeting in Karachi recently agreed to recommend the formation of an air transport company, jointly owned and managed by Moslem countries, and that a conference of Moslem railway experts should be convened to discuss the best method of creating railway links between the various Moslem states.

**Sir Cyril Hurcomb Visits South Eastern Division of the R.H.E.**—On December 12, Sir Cyril Hurcomb, Chairman of the British Transport Commission, inspected the London organisation of the South Eastern Division of the Road Haulage Executive, accompanied by Major-General G. N. Russell, Chairman of the Road Haulage Executive. During his tour Sir Cyril Hurcomb met members of the staff and saw how the newly created organisation is functioning. The tour concluded with a visit to a City depot to see vehicles being loaded ready for their night journey to the North.

**Western Region Christmas Train Arrangements.**—On Friday, December 23, Saturday, December 24, and Tuesday, December 27, days which are expected to be the peak travelling periods of the Christmas holiday, British Railways, Western Region, will run 184 trains additional to the normal weekday service. To assist suburban travellers, arrangements have been made for a special train to start from Ealing Broadway at 5.5 p.m. on December 22 and 23, calling at Slough, Reading and Didcot, for Newport, Cardiff, Bridgend and principal stations to Swansea. Services for returning holiday travellers to Paddington on December 27 will be augmented by 34

special trains from various parts of the country. Reservations of seats in trains from Paddington have been heavy, and in addition to the usual bookable trains, reservation facilities have been extended to seven relief trains. There has also been a heavy demand for sleeping berths on the West of England and South Wales services. The normal services to and from Southern Ireland via Fishguard will run throughout the Christmas holiday, with the following exceptions: no service Fishguard to Waterford on Monday night, December 26; no service Waterford to Fishguard on Tuesday night, December 27.

**Christmas Trees at Scottish Stations.**—Christmas trees are being displayed at a number of stations in the Scottish Region during Christmas and New Year, as part of an appeal on behalf of various charities. They are on show at three Glasgow stations, two in Edinburgh, one in Dundee, and one in Aberdeen, and the opening ceremonies have been performed by the respective Lord Provosts.

**Tavern Restaurant-Buffer Sets.**—The tavern car which has been running in the Eastern Region "Master Cutler" express between Sheffield and Marylebone, has been withdrawn from the train for an indefinite period. Reference to replacement of the first and third class restaurant cars forming part of the tavern set in this train was made in our September 9 issue, when it was stated that these dining cars were to be withdrawn for a number of modifications.

**Centenary of Continental Express Limited.**—Dating back to 1780, when John Friend, of Dover, conceived the idea of forwarding manufacturers' samples and other parcels by sailing packet to and from the Continent, Continental Express Limited, one of the Hay's Wharf group of companies, recently celebrated the centenary of its foundation, when, in 1849, John Friend Junior, who had negotiated a sole agency for Continental parcels with the South Eastern Railway, became, with John Piddington, who had secured a similar agency for the Belgian Govern-

ment's Dover-Ostend steamers, joint proprietor of the Continental Daily Parcels Express. In "Vitesse," an illustrated souvenir of the centenary, Mr. Aytoun Ellis outlines the history and development of the company from 1780 to the present day. The centenary celebrations included a luncheon on December 10, when among the many telegrams of congratulations received was one from the King; among the speakers were Admiral Sir Aubrey Smith, Mr. Rupert De La Bere, and other directors of the firm. On December 12, guests were entertained by the directors at a cocktail party; they included members of the diplomatic missions in London of the many countries with which Continental Express Limited has relations, and representatives of the Foreign Office, the Ministry of Transport, the Post Office, H.M. Customs, the Port of London Authority, and of British and Continental railway, shipping, banking, insurance, and commercial interests.

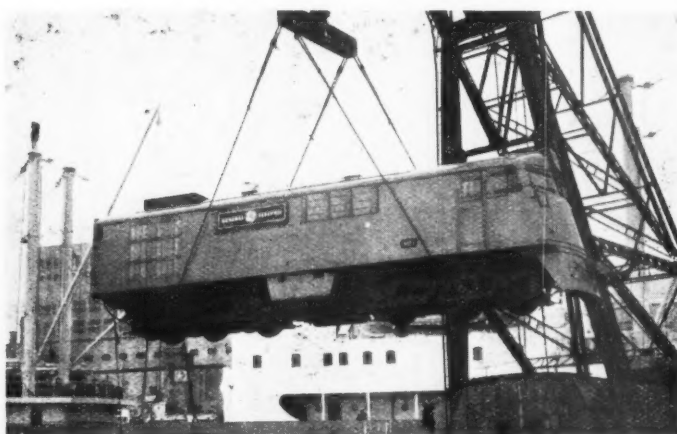
**German Firm Plans a South African Branch.**—A Reuter message from Johannesburg states that Henschel & Sohn, Kassel, Germany, plans to build locomotives, trolleybuses and heavy road-making machinery in South Africa. Herr Oscar R. Henschel is visiting South Africa to make preliminary plans for a factory.

**Members of Docks Executive Visit Preston and Manchester.**—Following the visit to Merseyside by members of the Docks & Inland Waterways Executive referred to in our December 9 issue, Sir Reginald Hill, Chairman of the Executive, and Sir Robert Letch, Mr. John Donovan, and Sir Ernest Murrant, Members, have been visiting Preston on December 14 and Manchester on December 15 and 16. The purpose of the visit has been consultation with harbour authorities and representatives of other interests concerned with the operation and use of ports and docks, and the Executive arranged to meet representatives of the Manchester Ship Canal Company, as well as various industrial establishments in the area.

**Dawlish Avoiding Line.**—The pre-war plan for a 15-mile long avoiding line between Exminster and Bishopsteignton on the G.W.R. main line to Cornwall is not being proceeded with, as a result of present-day circumstances. The line had been planned as an improvement to communications with the West from a traffic and operating point of view and avoided the Dawlish Warren section, where the coast is subject to heavy erosion. The G.W.R. obtained an Act of Parliament to proceed with construction and certain properties on the route were acquired by the railway at that time, though no dispossession occurred. In view of the very substantial cost which this project would involve at the present time, an endeavour is being made to find an alternative.

**British Process for Painting Aluminium.**—A new process which it is claimed overcomes the problem of painting aluminium effectively has been developed by Dynamal Limited in association with Tl Aluminium Limited. This process introduces a new primer containing acid ingredients, special resins, and a corrosion-resisting pigment. It etches the metal surface, establishing a close adhesion, providing at the same time a corrosion-proof coating. The new primer can be

### Main-Line Diesels for Argentina



Off-loading at Buenos Aires of one unit of a 2,000-h.p. main-line twin-unit diesel-electric locomotive, one of 35 being delivered by the General Electric Company, U.S.A., to the General Belgrano Railway of Argentina

## OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

**LONDON TRANSPORT EXECUTIVE.**—Applications are invited for the post of Control Assistant in the Shops Section of the Permanent Way (Rlys.) Office at Little Bridge Depot, Fulham. The duties of the post are concerned with the administration and organisation of the work of the Permanent Way (Rlys.) Shops, and comprise the direct control of foremen and shop staff engaged upon the manufacture of points and crossings and permanent way equipment of all kinds. The work involved includes general fitting, machinery and smithing, all types of welding, including flash butt welding of rails and plant maintenance and overhaul. Applicants should have a sound knowledge in mechanical and electrical theory, with practical workshop experience and ability to control staff. Preference will be given to candidates who are Corporate Members of the Institution of Mechanical Engineers. The salary range for the post is £650-£700 p.a. commencing salary according to qualifications and experience. The appointment is subject to a medical examination. On completion of a satisfactory probationary period, the selected applicant would, where eligible, be expected to join a Contributory Superannuation Scheme. Canvassing, either directly or indirectly, will disqualify. Applications giving full details of age, training and experience should be sent within 14 days of the appearance of this advertisement to the STAFF OFFICER (F/EV 112), LONDON TRANSPORT EXECUTIVE, 55, Broadway, Westminster, S.W.1. For acknowledgment, enclose addressed envelope.

**WANTED.**—*Railway Gazette*, September 27, 1940, March 14, 1941, and Index Vol 74.—STEFFENSEN, Ehlersvej 8, Hellerup, Denmark.

applied by brush, spray, or roller coating, and it will dry in 15 min. Because it eliminates the need of pre-treatment equipment it is particularly useful for large aluminium structures unsuitable for other pre-treatment processes. It can be applied to a wide range of other metals and alloys.

#### Mechanical Handling Exhibition, 1950.

—The provisional programme of subjects to be discussed at the second Mechanical Handling Exhibition at Olympia, London, to be held from June 6 to 17, 1950, has been planned specially to assist visiting buyers and also to promote the technique of mechanical handling as applied to production in general. The exhibition is again being organised by *Mechanical Handling*, Dorset House, Stamford Street, London, S.E.1, and among the subjects to be discussed will be the mechanical unloading of rail wagons, industrial trucking, and the use of jib cranes for high-speed handling of cargo at docks.

**Ransome & Marles.**—At the recent annual meeting of the Ransome & Marles Bearing Co., Ltd., whose results were given in our September 9 issue, the Chairman, Mr. F. W. Baker, said that for the six months to December 31, 1948, sales were still rising steadily, but the general decline in ordering, due partly to recession in trade, though probably more to liquidation of unduly high stocks held by users, was reflected in the sales. The re-scheduling of delivery dates and suspending of orders had brought out a more realistic and healthy programme, and much dead wood had been cut out. In spite of this, the sales for the 12 months were again a record. Some industries experienced a boom after the war, and the easing of their demands would now enable them to replenish their badly depleted stock, and allow them to give better service both at home and overseas, which was essential. If the present level of consumption continued among the

#### Crown Agents for the Colonies

**SENIOR TRAFFIC SUPERINTENDENT** required by Gold Coast Government Railway for one tour of 18 to 24 months with prospect of permanency. Salary plus overseas pay £860 rising to £1,200 a year. A temporary allowance on a sliding scale is also payable—on salaries up to £750 a year this amounts to 15 per cent. of basic rate. Outfit allowance £60. Free passages. Liberal leave on full salary. Candidates, not over 35 years of age and preferably corporate members of Institute of Transport, must have thorough practical knowledge of all sections of passenger and goods station working, including accounts, rates, etc., traffic operating and railway construction work. Knowledge of Morse telegraphy and dock working desirable. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/2322/3E on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

**SENIOR and Junior Draughtsmen** required, with experience in the design of diesel-electric locomotives. Men with sound steam and/or electric traction experience will be considered. Experience of bogie design would be an advantage. Reply particulars of training, experience, salary required to Box 545, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**LOCOMOTIVE DRAUGHTSMEN** required for electric locomotive design. Experience of electric or diesel-electric locomotives not essential. Permanent position with good prospects for suitable applicants. Pension scheme. Apply in writing stating age, qualifications, and previous experience (if any), marking envelopes "Loco," to: PERSONNEL MANAGER, METROPOLITAN-VICKERS ELECTRICAL CO. LTD., Trafford Park, Manchester, 17.

main industrial users, and no further international obstacles restricted both direct and indirect exports, they should be able to keep production at a level sufficient to earn a reasonable profit.

**Brass Band Competition.**—At the third annual contest of the South-West Brass Bands Association at Exeter on December 3, British Railways, Southern Region, Exeter & District Silver Band retained for a second year the Silver Trophy, given by the president, and the Bedwell Memorial Shield.

**Trafficators for London Buses.**—Since the war the London Transport Executive Bus & Coach Development Section has carried out live tests with experimental trafficator signalling devices to eliminate as many as possible of these units' design weaknesses, both mechanical and electrical, before the commencement of a service test. The stage has been reached at which a large-scale experiment was thought to be desirable and 225 vehicles are being equipped to obtain the required information concerning service performance and drivers' reactions. The trafficators to be used in this experiment will be of two types, the first with the usual one-piece arm and the other a two-piece articulated arm. The arms will be used in conjunction with a rear direction arrow panel.

**Leyland Chassis to be Assembled in India.**—Decisions to extend still further the assembly of bus and truck chassis abroad have been made by Leyland Motors Limited. Mr. H. S. Ford, Assistant General Manager, started for India on December 6 to examine the position in that country. He will examine a number of existing plants and facilities in various part of the country which have been considered suitable for large-scale chassis assembly. During his tour he will be accompanied by Mr. B. W. H. Wilson. Export of Leyland products to India have increased rapidly within the past few years.

#### Tyne Improvement Commission

**THE Tyne Improvement Commissioners** invite applications from qualified persons for the position of Senior Assistant Engineer under their Chief Engineer, Mr. R. B. Porter, M.I.C.E. Applicants must be Chartered Civil Engineers with extensive experience in the design and maintenance of dock and harbour works and installations. The person appointed will be responsible to the Chief Engineer for the preparation of designs, estimates and contract specifications and drawing in connection with new works schemes, etc. Mechanical experience is desirable though not essential. Salary £700 per annum rising by annual increments of £25 to £800 per annum plus War Bonus (at present £65 per annum). The person appointed will be subject to the provisions of the Commissioners' Superannuation Scheme. Applicants must not be less than 32 years of age nor more than 45 years of age on January 1, 1950. The person appointed will be required to reside in the district and devote himself exclusively to the service of the Commissioners. Applications on a prescribed form, copies of which may be obtained from the undersigned, will be received up to January 12, 1950, and should be addressed to the Secretary in an envelope endorsed "Senior Assistant Engineer." Canvassing will be a disqualification. By Order, J. K. McKENDRICK, Secretary, Tyne Improvement Commission Offices, Bewick Street, Newcastle-upon-Tyne, 1.

**FULLY** qualified Bogie Designer with experience in all forms of locomotive and rolling stock bogies, and in particular motor bogies. Permanent and progressive position to suitable applicant. Particulars of training and experience with salary required to Box 548, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**FACTORY** possessing machine tools to the value of £1,000,000, is desirous of selling entire plant, either in bulk lots or as individual items. Machines of all types offered. Quick sale is essential for accommodation reasons. Only enquiries for specific machines replied to.—Box 558, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Running units, such as engines, gearboxes, and axles despatched to India under the scheme will be thoroughly tested at Leyland before shipment.

**Reducing Transport Costs.**—At a special conference between the British Transport Commission and the executive committees of the transport trade unions on December 13, the serious losses being incurred by the Commission and the necessity for improved efficiency were discussed. Mr. Alfred Barnes, Minister of Transport, was present and called on all unions to co-operate in a general reduction of staff and in a relatively greater reduction of road transport staff. The meeting was also addressed by Sir Cyril Hurcomb, Chairman, British Transport Commission; Sir Eustace Missenden, Chairman, Railway Executive; Lord Latham, Chairman, London Transport Executive; Major General G. N. Russell, Chairman, Road Transport Executive; and Lord Inman, Chairman, Hotels Executive. About 100 trade union representatives were present at the conference and it is stated that various questions arising out of the Commission's 1948 annual report were the subject of frank discussion.

**"West Country" Class Naming Ceremonies.**—On November 24 the Southern Region "West Country" class Pacific No. 34031 was named *Torrington* by Alderman Holwill, Mayor of Torrington. Mr. T. E. Chrimes, Motive Power Superintendent, Southern Region, presided at the ceremony and among other officers of the Southern Region who were present were: Messrs. C. Grasemann, Public Relations & Publicity Officer; G. Bishop, Western Divisional Superintendent; R. D. Steele, Western Divisional Motive Power Superintendent. At a further ceremony on November 25, "West Country" class No. 34092 was named *Wells*. Alderman Kippax, Mayor of Wells, performed the ceremony, and Mr. A. Earle Edwards, Southern Divisional Superintendent,

Southern Region, presided. Among those present were: Mr. C. Grasemann; Messrs. R. G. Pole, Divisional Superintendent, Bristol, Western Region; W. E. Blakesley, District Motive Power Superintendent, Bristol, London Midland Region; and the Right Reverend W. Bradfield, Lord Bishop of Bath & Wells.

**Great Western of Brazil Ratification Delay.**—The Great Western of Brazil Railway Company states that the period for ratification of the agreement with the Brazilian Government for the rescission of contract has been extended by 180 days until May 20, 1950. The agreement, signed in London on May 26 last, provided for ratification by November 23, 1949, unless mutually agreed otherwise.

**Dorman, Long & Co. Ltd.**—Preliminary figures show consolidated trading profit for the year ended September 30, 1949, to be £5,187,645, after transferring £325,156 to provision for relinings, repairs, and other purposes (£4,219,601 for the previous year). Depreciation required £961,755 (£1,002,225), and income tax £1,835,017 (£1,331,494), and other taxation £569,404 (£458,633). This leaves for the parent company account £1,342,079 (£1,081,577). The allocation to general reserve is increased to £1,000,000. Distribution is to be maintained at 16 per cent. on preferred ordinary shares, and 8 per cent. on ordinary shares, and the carry-forward is increased from £104,224 to £116,631.

**Public Transport Association Incorporated.**—The 1950 conference of the Public Transport Association, Incorporated, which is to be held at Brighton on April 25, 26 and 27, 1950, will have its headquarters at the Metropole Hotel, though all business sessions and other functions will be held in the Royal Pavilion Estate. The programme for the conference as at present arranged will comprise: April 25, afternoon, Maynard cup golf competition, evening, informal reception by the Chairman of the Council in the Royal Pavilion; April 26, morning, annual general meeting in the Royal Pavilion followed by a paper and discussion, evening, Association's annual dinner in the Corn Exchange, followed by dancing in the Royal Pavilion; April 27, morning, paper and discussion in the Royal Pavilion, evening, civic reception and dance in the Royal Pavilion.

## Railway Stock Market

One feature of the markets has been a marking up of Australian securities since the election result, Commonwealth bank shares gaining up to £1, now that the threat of nationalisation in Australia has been finally removed. The undertone in other sections was fairly steady, though sentiment was affected by fluctuations in British Funds, which reacted after earlier small gains. The market is uncertain whether the Government broker will be prepared still to support Gilt-edged now that the result of the big Exchequer bond conversion is known. There were few outstanding movements in industrials, but reports that further important new issues are being planned, indicate confidence in the near-term outlook for markets.

In foreign rails, there has been a revival in La Guaira & Caracas and in Bolivar stocks, which have shown gains of up to nearly £10 since the statement that take-over negotiations have been resumed and that stockholders should await a further statement. The market view is that at their improved levels the stocks of the two companies are still undervalued, assuming, of course, that reasonably fair take-over terms result. La Guaira ordinary stock has jumped from 18½ to 28, and the 5 per cent. debentures from 58½ to 68. Moreover, Bolivar "A" debentures have been advanced from 45 to 53 and the "C" debentures from 20 to 28. All these stocks are held firmly and not available in the market in any amount.

Brazil rails lost further ground, Leopoldina and Great Western of Brazil being sold on fears, reinforced by the latest news, that it is unlikely that the Brazilian Government will ratify the sale agreements until the middle of next year. The long-awaited statement from the Leopoldina directors giving the share-out values of the individual stocks is proving a complicated task; but it is hoped that it will be available shortly. The market view is that current prices of the stocks are likely to prove moderate in relation to their eventual pay-out, at least as regards the various debentures. But uncertainty exists regarding the ordinary and preference stocks because their values will depend on whether the direc-

tors decide that preference stockholders should have full compensation for their large dividend arrears. Meanwhile, Leopoldina ordinary have eased to 8½, the preference to 24½, the 4 per cent. debentures to 85½, and the 6½ per cent. debentures to 125, although buyers were about for the debentures. Leopoldina Terminal debentures receded to 96 and the ordinary units were 2s. 6d. Great Western of Brazil ordinary receded to 66½ on the prospect of a pay-out delay, although the market price is well below the compensation estimate already made by the directors. San Paulo 10s. units at 15s. 9d. failed to hold all of an earlier improvement.

Canadian Pacific came back to 27½, and United of Havana stocks, though active, turned easier, awaiting the statement on the outcome of the take-over negotiations. The 1906 debentures were 26½. Manila "A" debentures were 83, and the preference shares 7s. Taltal Rail shares marked 15s. 6d., and Nitrate Rails were 76s. 3d., but Antofagasta ordinary eased to 7½ and the preference stock was 45½.

Road transport companies' shares generally have been steady on the assumption that, although rising costs must affect profits, dividends are generally likely to be maintained. Lancashire Transport were 78s. 6d., Southdown 122s. 6d., and West Riding 68s. B.E.T. deferred stock rallied to £1,480.

Iron and steel shares were firm with most movements not exceeding more than a few pence, although Dorman Long were good at 31s. 3d., United Steel firmed up to 28s., and Guest Keen to 41s. 1½d., while Vickers at 27s. were also slightly better on balance, and Ruston & Hornsby improved to 27s. 6d.

Locomotive builders' and allied companies' shares were unaffected by the important Indian developments which will provide valuable contracts for the industry. Charles Roberts were 88s. 1½d. ex the bonus, and at Glasgow, Hurst Nelson were quoted at 60s., at which there is a yield of 5½ per cent. on last year's distribution. Vulcan Foundry were 18s. 4½d., Wagon Repairs 17s., Beyer Peacock 19s. 3d., and North British Locomotive 19s. 4½d. Gloucester Wagon held steady at 50s. 6d.

## Forthcoming Meetings

December 16 (Fri.).—Carlisle & District Transport Club. Annual dinner.

December 17 (Sat.).—Permanent Way Institution, Manchester & Liverpool Section, at the Municipal College of Technology, Sackville Street, Manchester, at 2.30 p.m. "Railway Construction in Western Europe," by Mr. I. G. White.

December 19 (Mon.).—Institute of Transport, at 80, Portland Place, London, W.1, at 5.45 p.m. Annual general meeting of corporate members.

December 22 (Thu.).—Institution of Railway Signal Engineers, at Hunts Bank, Manchester, at 6.45 p.m. "Electrical & Mechanical Interlocking," by Mr. W. H. Such.

December 30 (Fri.).—Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, at 3 p.m. Christmas lecture for boys: "The Wonders of Big Bridges," by Mr. H. Shirley Smith.

## Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	Inc. or dec. compared with 1947-48		Total	Increase or decrease		
South & Central America	Antofagasta...	811	4.12.49	£ 74,550	—	17,400	48	3,263,100	—	568,730
	Costa Rica ...	281	Sept., 1949	30,929	—	3,154	13	102,621	—	8,998
	Dorada ...	70	Oct., 1949	31,848	—	908	43	296,878	—	23,637
	Inter. Ctl. Amer. ...	794	Oct., 1949	\$579,232	—	\$376,578	43	\$10,110,125	—	\$960,613
	La Guaira ...	22½	Nov., 1949	\$108,378	—	\$1,458	48	\$1,167,360	—	\$9,807
	Nitrate ...	382	30.11.49	20,697	—	6,281	48	423,988	—	138,278
	Paraguay Cent. ...	274	2.12.49	\$143,430	—	\$24,448	22	\$1,349,815	—	7,898,863
	Peru Corp. ...	1,050	Nov., 1949	\$6,493,300	—	\$2,433,001	22	\$27,009,758	—	\$8,615,128
	" (Bolivian Section)	66	Nov., 1949	Bs.1,211,000	—	Bs.1,920,270	22	Bs.52,157,164	—	Bs.8,295,289
	Salvador ...	100	Aug., 1949	c81,000	—	c1,000	9	c173,000	—	c8,000
	Taltal ...	154	Nov., 1949	15,910	—	9,120	22	60,980	—	22,460
United of Havana ...	1,301	11.6.49	\$231,311	—	\$14,746	49	\$13,733,928	—	\$4,659,951	
Canada	Canadian National†	23,473	Oct., 1949	15,116,000	—	514,000	43	136,964,000	—	3,152,000
	Canadian Pacific†	17,037	Oct., 1949	11,084,000	—	400,000	43	100,323,000	—	3,643,000
Various	Barsi Light*	167	Oct., 1949	27,240	—	637	30	206,347	—	24,652
	Egyptian Delta ...	607	31.10.49	21,874	—	5,055	31	385,264	—	12,682
	Gold Coast ...	536	Oct., 1949	217,578	—	497	32	1,625,728	—	213,529
	Mid. of W. Australia	277	Oct., 1949	28,391	—	3,076	18	109,866	—	3,847
	Nigeria ...	1,900	Sept., 1949	485,713	—	73,445	25	2,703,823	—	86,332
	South Africa ...	13,347	12.11.49	1,552,069	—	181,011	32	48,003,560	—	4,838,001
	Victoria ...	4,744	Aug., 1949	1,220,311	—	155,378	9	—	—	—

\* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at \$3 to £1